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=> FIL REG
FILE 'REGISTRY' ENTERED AT 14:29:39 ON 23 MAR 2010
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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=> D HIS NOFILE

     FILE 'HCAPLUS' ENTERED AT 11:13:53 ON 23 MAR 2010
                E US 2008-593481/APPS
L1             1 SEA SPE=ON  ABB=ON  PLU=ON  US2008-593481/AP
                E WO2004-EP3618/APPS
L2             1 SEA SPE=ON  ABB=ON  PLU=ON  (WO2004-EP3618/AP OR WO2004-EP3
                618/PRN)
L3             1 SEA SPE=ON  ABB=ON  PLU=ON  (L1 OR L2)
                SEL L3 RN

     FILE 'REGISTRY' ENTERED AT 11:14:36 ON 23 MAR 2010
L4             6 SEA SPE=ON  ABB=ON  PLU=ON  (117655-32-0/BI OR 148595-66-8/
                BI OR 256425-72-6/BI OR 25852-47-5/BI OR 39469-38-0/BI OR
                868-77-9/BI)

     FILE 'HCAPLUS' ENTERED AT 11:16:03 ON 23 MAR 2010
                E SIN XICOLA A/AU
L5            12 SEA SPE=ON  ABB=ON  PLU=ON  ("SIN XICOLA AGUSTI"/AU OR
                "SIN XICOLA AGUSTIN"/AU)
                E DUBITSKY A/AU
L6             3 SEA SPE=ON  ABB=ON  PLU=ON  "DUBITSKY A"/AU OR "DUBITSKY A
                YURI"/AU
                E ALBIZZATI E/AU
L7           171 SEA SPE=ON  ABB=ON  PLU=ON  ("ALBIZZATI E"/AU OR "ALBIZZATI
                 E D"/AU OR "ALBIZZATI ENRICO"/AU OR "ALBIZZATI ENRIQUE
                D"/AU)
                E KOPNIN E/AU
L8            79 SEA SPE=ON  ABB=ON  PLU=ON  ("KOPNIN E"/AU OR "KOPNIN E
                M"/AU OR "KOPNIN EVGENI"/AU OR "KOPNIN EVGENY"/AU OR
                "KOPNIN EVGENY M"/AU OR "KOPNIN EVGUENI M"/AU)
                E RODA E/AU
L9            77 SEA SPE=ON  ABB=ON  PLU=ON  "RODA E"/AU OR "RODA ELENA"/AU
L10          334 SEA SPE=ON  ABB=ON  PLU=ON  (L5 OR L6 OR L7 OR L8 OR L9)
                E PIRELLI & C/CO
                E PIRELLI&/CO
                E PIRELLI & C/CO
                E 101+ALL
                E PIRELLI S P A/CO
                E E3+ALL
L11          744 SEA SPE=ON  ABB=ON  PLU=ON  ("PIRELLI S P A"/CO OR
                "PIRELLI CAVI E SISTEMI S P A"/CO OR "PIRELLI CAVI S P
                A"/CO OR "PIRELLI COORDINAMENTO PNEUMATICI S P A"/CO OR
                "PIRELLI COORDINAMENTO PNEUMATICI SOCIETA PER AZIONI"/CO
                OR "PIRELLI GENERAL CABLE WORKS LTD"/CO OR "PIRELLI
                GENERAL PLC"/CO OR "PIRELLI LTD"/CO OR "PIRELLI PNEUMATICI
                S P A"/CO OR "PIRELLI SOCIETA PER AZIONI"/CO OR "SOC
                ITALIANA PIRELLI"/CO OR "SOCIETA ITALIANA PIRELLI"/CO)
                E PIRELLI & C SPA ITALY/CO
                E PIRELLI & C S P A ITALY/CO
                E E10+ALL
L12          120 SEA SPE=ON  ABB=ON  PLU=ON  ("PIRELLI CO"/CO,CS,PA OR
                "PIRELLI C S P A"/CO,CS,PA)
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L13         863 SEA SPE=ON  ABB=ON  PLU=ON  L11 OR L12

     FILE 'REGISTRY' ENTERED AT 12:36:32 ON 23 MAR 2010
L14           1 SEA SPE=ON  ABB=ON  PLU=ON  L4 AND PMS/CI

     FILE 'LREGISTRY' ENTERED AT 12:46:40 ON 23 MAR 2010
L15             STR

     FILE 'REGISTRY' ENTERED AT 13:03:41 ON 23 MAR 2010
L16          50 SEA SSS SAM L15

     FILE 'LREGISTRY' ENTERED AT 13:04:03 ON 23 MAR 2010
L17             STR L15

     FILE 'REGISTRY' ENTERED AT 13:09:57 ON 23 MAR 2010
L18          26 SEA SSS SAM L17

     FILE 'LREGISTRY' ENTERED AT 13:15:11 ON 23 MAR 2010
L19             STR L15

     FILE 'REGISTRY' ENTERED AT 13:17:00 ON 23 MAR 2010
L20             SCR 2043
L21          50 SEA SSS SAM L19 AND L20
L22      335107 SEA SSS FUL L19 AND L20
                SAV TEMP L22 RUM481/A

     FILE 'LREGISTRY' ENTERED AT 13:19:10 ON 23 MAR 2010
L23             STR L19

     FILE 'REGISTRY' ENTERED AT 13:22:44 ON 23 MAR 2010
L24          50 SEA SUB=L22 SSS SAM L23
L25       21469 SEA SUB=L22 SSS FUL L23
                SAV L25 RUM481A/A
L26         292 SEA SPE=ON  ABB=ON  PLU=ON  L25 AND 1/NC
L27          50 SEA SPE=ON  ABB=ON  PLU=ON  L26 AND (C2H4O OR C3H6O)
L28           1 SEA SPE=ON  ABB=ON  PLU=ON  L27 AND L4
L29          50 SEA SUB=L22 SSS SAM L17
L30       90563 SEA SUB=L22 SSS FUL L17
L31        2066 SEA SPE=ON  ABB=ON  PLU=ON  L30 AND 1/NC
L32           0 SEA SPE=ON  ABB=ON  PLU=ON  L31 AND L4
L33           0 SEA SPE=ON  ABB=ON  PLU=ON  L30 AND L4
                SEL L31 1- RN
                E (C15 H16 F N O2)X/MF
L34           1 SEA SPE=ON  ABB=ON  PLU=ON  "(C15 H16 F N O2)X"/MF
                SEL L31 1- CRN
                EDIT E1-E999 /CRN /BI
L35         999 SEA SPE=ON  ABB=ON  PLU=ON  (868-77-9/BI OR 96571-20-9/BI
                OR 5919-74-4/BI OR 52337-42-5/BI OR 528-44-9/BI OR
                56-81-5/BI OR 56090-54-1/BI OR 208589-59-7/BI OR 50327-24-7
                /BI OR 59113-36-9/BI OR 9004-74-4/BI OR 9051-49-4/BI OR
                106-41-2/BI OR 1143463-87-9/BI OR 14097-19-9/BI OR
                173947-41-6/BI OR 1830-78-0/BI OR 194920-51-9/BI OR
                25736-86-1/BI OR 29037-84-1/BI OR 39420-45-6/BI OR
                42503-45-7/BI OR 627909-42-6/BI OR 1002115-20-9/BI OR
                1004321-70-3/BI OR 1004549-71-6/BI OR 1009586-68-8/BI OR
                1009587-82-9/BI OR 1009587-86-3/BI OR 1009588-00-4/BI OR
                1009588-02-6/BI OR 101525-90-0/BI OR 1018678-95-9/BI OR
                101927-31-5/BI OR 101969-92-0/BI OR 1021158-33-7/BI OR
                1021158-36-0/BI OR 1021393-19-0/BI OR 1026-97-7/BI OR
                10312-49-9/BI OR 1032958-89-6/BI OR 1032958-90-9/BI OR
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                1034342-51-2/BI OR 1034342-57-8/BI OR 1034342-58-9/BI OR
                1034342-59-0/BI OR 1034342-68-1/BI OR 1034342-69-2/BI OR
                1034342-70-5/BI OR 1034342-71-6/BI OR 103553-58-8/BI OR
                1038399-39-1/BI OR 1038399-44-8/BI OR 1041055-25-7/BI OR
                1041055-27-9/BI OR 1046270-22-7/BI OR 1047977-42-3/BI OR
                1048330-57-9/BI OR 1048354-02-4/BI OR 1048354-08-0/BI OR
                1048373-32-5/BI OR 105650-07-5/BI OR 1060374-97-1/BI OR
                1060375-00-9/BI OR 1060375-02-1/BI OR 1060375-04-3/BI OR
                107663-38-7/BI OR 1079286-97-7/BI OR 1083399-87-4/BI OR
                1084701-20-1/BI OR 1084701-23-4/BI OR 1084701-26-7/BI OR
                1084701-29-0/BI OR 1084701-32-5/BI OR 1084701-35-8/BI OR
                1084777-58-1/BI OR 1084777-60-5/BI OR 1084777-63-8/BI OR
                1084777-64-9/BI OR 1084777-66-1/BI OR 1084777-69-4/BI OR
                1084905-81-6/BI OR 1100737-35-6/BI OR 110254-11-0/BI OR
                110254-28-9/BI OR 1102959-17-0/BI OR 1103534-05-9/BI OR
                1103534-06-0/BI OR 1106769-58-7/BI OR 110782-91-7/BI OR
                1108600-25-4/BI OR 110861-35-3/BI OR 1109290-87-0/BI OR
                1110783-62-4/BI OR 1114416-30-6/BI OR 1114416-89-5/BI OR
                1116568-93-4/BI OR 111720-19-
                DEL SEL
                SEL L31 1240- RN
                DEL SEL
                SEL L31 1240- CRN
                EDIT E1-E683 /CRN /BI
L36          683 SEA SPE=ON  ABB=ON  PLU=ON  (868-77-9/BI OR 5919-74-4/BI
                OR 25736-86-1/BI OR 9004-74-4/BI OR 35752-78-4/BI OR
                67-56-1/BI OR 14216-23-0/BI OR 2867-47-2/BI OR 6976-93-8/BI
                 OR 124182-73-6/BI OR 13092-57-4/BI OR 15721-10-5/BI OR
                2761-09-3/BI OR 39420-45-6/BI OR 4513-53-5/BI OR 52337-42-5
                /BI OR 5466-99-9/BI OR 7328-23-6/BI OR 89-05-4/BI OR
                89-08-7/BI OR 923-26-2/BI OR 10020-12-9/BI OR 100226-49-1/B
                I OR 100365-45-5/BI OR 100493-99-0/BI OR 100494-01-7/BI OR
                10096-69-2/BI OR 101030-50-6/BI OR 101902-34-5/BI OR
                101908-89-8/BI OR 101943-71-9/BI OR 102074-58-8/BI OR
                102223-93-8/BI OR 103135-94-0/BI OR 103380-96-7/BI OR
                103380-98-9/BI OR 103381-00-6/BI OR 103381-02-8/BI OR
                103489-89-0/BI OR 103553-48-6/BI OR 103915-84-0/BI OR
                10430-85-0/BI OR 104609-61-2/BI OR 104955-65-9/BI OR
                105-16-8/BI OR 10595-80-9/BI OR 106010-65-5/BI OR 106108-18
                -3/BI OR 106826-65-7/BI OR 106884-07-5/BI OR 106981-29-7/BI
                 OR 107654-40-0/BI OR 107654-42-2/BI OR 107654-46-6/BI OR
                107654-52-4/BI OR 107654-54-6/BI OR 107998-18-5/BI OR
                107998-20-9/BI OR 108180-39-8/BI OR 108180-40-1/BI OR
                108708-06-1/BI OR 109135-67-3/BI OR 109509-78-6/BI OR
                109603-25-0/BI OR 110-16-7/BI OR 110161-78-9/BI OR
                110254-31-4/BI OR 110254-36-9/BI OR 110259-21-7/BI OR
                110412-39-0/BI OR 110680-95-0/BI OR 110712-08-8/BI OR
                111100-18-6/BI OR 111158-60-2/BI OR 111158-62-4/BI OR
                111308-10-2/BI OR 111488-97-2/BI OR 111764-75-1/BI OR
                112-34-5/BI OR 112503-98-7/BI OR 112504-00-4/BI OR
                112593-08-5/BI OR 112987-10-7/BI OR 113837-22-2/BI OR
                113930-56-6/BI OR 113930-58-8/BI OR 113955-87-6/BI OR
                114266-91-0/BI OR 114349-53-0/BI OR 114349-55-2/BI OR
                114374-38-8/BI OR 114556-73-9/BI OR 115136-92-0/BI OR
                115156-97-3/BI OR 115157-01-2/BI OR 115708-44-6/BI OR
                115708-46-8/BI OR 115708-48-0/BI OR 116928-90-6/BI OR
                117116-39-9/BI OR 117231-54-6/BI OR 117391-81-8/BI OR 117
L37         1668 SEA SPE=ON  ABB=ON  PLU=ON  (L35 OR L36)
L38            1 SEA SPE=ON  ABB=ON  PLU=ON  L37 AND L4
L39         3657 SEA SPE=ON  ABB=ON  PLU=ON  L31 OR L37
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     FILE 'HCAPLUS' ENTERED AT 13:50:50 ON 23 MAR 2010
L40      316049 SEA SPE=ON  ABB=ON  PLU=ON  (BATTERY OR BATTERIES OR
                (ELECTROCHEM? OR ELECTROLY? OR GALVANI? OR WET OR DRY OR
                PRIMARY OR SECONDARY)(2A)(CELL OR CELLS) OR WETCELL? OR
                DRYCELL?)/BI,AB
L41      110326 SEA SPE=ON  ABB=ON  PLU=ON  FUEL? (2A) CELL? OR SOFC#
L42      397439 SEA SPE=ON  ABB=ON  PLU=ON  ELECTROCHEM? OR ELECTRO (2A)
                CHEM?
L43      723201 SEA SPE=ON  ABB=ON  PLU=ON  (L40 OR L41 OR L42)
L44      485984 SEA SPE=ON  ABB=ON  PLU=ON  ANOD#### OR CATHOD#### OR
                (POS? OR NEG?) (2A) ELECTROD####
L45      211314 SEA SPE=ON  ABB=ON  PLU=ON  L43 AND L44
L46        5026 SEA SPE=ON  ABB=ON  PLU=ON  L27
L47      534500 SEA SPE=ON  ABB=ON  PLU=ON  L39
L48        1548 SEA SPE=ON  ABB=ON  PLU=ON  L46 AND L47
L49          18 SEA SPE=ON  ABB=ON  PLU=ON  L45 AND L48
L50             TRA PLU=ON  L49 1- RN :     236 TERMS

     FILE 'REGISTRY' ENTERED AT 13:54:05 ON 23 MAR 2010
L51         236 SEA SPE=ON  ABB=ON  PLU=ON  L50
L52          54 SEA SPE=ON  ABB=ON  PLU=ON  L51 AND M/ELS
L53          15 SEA SPE=ON  ABB=ON  PLU=ON  L52 AND (AYS OR TIS)/CI

     FILE 'HCAPLUS' ENTERED AT 14:00:20 ON 23 MAR 2010
L54       13004 SEA SPE=ON  ABB=ON  PLU=ON  L53
L55           9 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L54
L56          18 SEA SPE=ON  ABB=ON  PLU=ON  L55 OR L49
L57      671073 SEA SPE=ON  ABB=ON  PLU=ON  NANO?
L58           2 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L57
L59      109524 SEA SPE=ON  ABB=ON  PLU=ON  SOL? (2A) GEL?
L60           3 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L59
L61             QUE SPE=ON  ABB=ON  PLU=ON  (HEAT? OR WARM? OR HOT# OR
                CALEFACT? OR TORREFACT? OR PYROL? OR SINTER? OR CALCIN? OR
                AUTOCLAV? OR THERMOL? OR THERMAL? OR TEPEFACT? OR PREHEAT?
                OR MELT? OR FUSE# OR FUSING# OR FUSION?)/BI,AB
L62           5 SEA SPE=ON  ABB=ON  PLU=ON  L49 AND L61
L63          18 SEA SPE=ON  ABB=ON  PLU=ON  L49 OR L55 OR L58 OR L60 OR
                L62
L64           1 SEA SPE=ON  ABB=ON  PLU=ON  L63 AND (L10 OR L13)
L65          10 SEA SPE=ON  ABB=ON  PLU=ON  (L55 OR L58 OR L60 OR L62) AND
                L63
L66           9 SEA SPE=ON  ABB=ON  PLU=ON  L65 NOT L64
L67           8 SEA SPE=ON  ABB=ON  PLU=ON  L63 NOT (L66 OR L64)
L68        2320 SEA SPE=ON  ABB=ON  PLU=ON  L45 AND L59
L69         881 SEA SPE=ON  ABB=ON  PLU=ON  L68 AND L61
L70         221 SEA SPE=ON  ABB=ON  PLU=ON  L69 AND L57
                E SOL-GEL PROCESSING/CT
                E E3+ALL
L71       34823 SEA SPE=ON  ABB=ON  PLU=ON  "SOL-GEL PROCESSING"+PFT/CT
L72         121 SEA SPE=ON  ABB=ON  PLU=ON  L70 AND L71
L73           2 SEA SPE=ON  ABB=ON  PLU=ON  L72 AND L46
L74          14 SEA SPE=ON  ABB=ON  PLU=ON  L72 AND L47
L75          12 SEA SPE=ON  ABB=ON  PLU=ON  L72 AND L54
L76          23 SEA SPE=ON  ABB=ON  PLU=ON  (L73 OR L74 OR L75)
L77           1 SEA SPE=ON  ABB=ON  PLU=ON  L76 AND (L10 OR L13)
L78           1 SEA SPE=ON  ABB=ON  PLU=ON  L77 OR L64
L79          21 SEA SPE=ON  ABB=ON  PLU=ON  L76 NOT (L67 OR L66 OR L78)
L80             TRA PLU=ON  L76 1- RN :     223 TERMS
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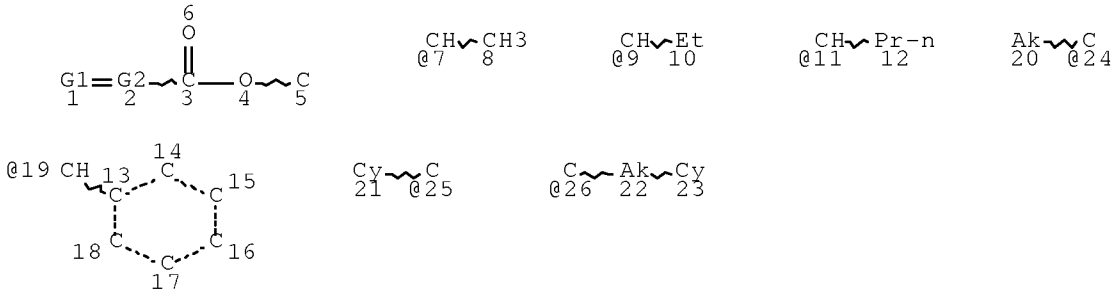
     FILE 'REGISTRY' ENTERED AT 14:20:53 ON 23 MAR 2010
L81         223 SEA SPE=ON  ABB=ON  PLU=ON  L80
L82          29 SEA SPE=ON  ABB=ON  PLU=ON  L81 AND (AYS OR TIS)/CI

     FILE 'HCAPLUS' ENTERED AT 14:22:21 ON 23 MAR 2010
L83       96837 SEA SPE=ON  ABB=ON  PLU=ON  L82
L84       12040 SEA SPE=ON  ABB=ON  PLU=ON  L45 AND L83
L85          73 SEA SPE=ON  ABB=ON  PLU=ON  L84 AND L46
L86         454 SEA SPE=ON  ABB=ON  PLU=ON  L84 AND L47
L87           7 SEA SPE=ON  ABB=ON  PLU=ON  L85 AND L86
L88           1 SEA SPE=ON  ABB=ON  PLU=ON  L87 AND (L10 OR L13)
L89           1 SEA SPE=ON  ABB=ON  PLU=ON  L88 OR L78
L90           0 SEA SPE=ON  ABB=ON  PLU=ON  L87 NOT (L67 OR L66 OR L79 OR
                L89)
L91           4 SEA SPE=ON  ABB=ON  PLU=ON  L85 AND L57
L92          48 SEA SPE=ON  ABB=ON  PLU=ON  L86 AND L57
L93           2 SEA SPE=ON  ABB=ON  PLU=ON  L91 AND L59
L94          13 SEA SPE=ON  ABB=ON  PLU=ON  L92 AND L59
L95          13 SEA SPE=ON  ABB=ON  PLU=ON  L93 OR L94
L96           1 SEA SPE=ON  ABB=ON  PLU=ON  L95 AND (L10 OR L13)
L97           1 SEA SPE=ON  ABB=ON  PLU=ON  L96 OR L89
L98           5 SEA SPE=ON  ABB=ON  PLU=ON  L95 NOT (L67 OR L66 OR L79 OR
                L97)
L99           2 SEA SPE=ON  ABB=ON  PLU=ON  1808-2004/PY,PRY,AY AND L79
L100          6 SEA SPE=ON  ABB=ON  PLU=ON  1808-2004/PY,PRY,AY AND L66
L101          6 SEA SPE=ON  ABB=ON  PLU=ON  1808-2004/PY,PRY,AY AND L67
L102          1 SEA SPE=ON  ABB=ON  PLU=ON  1808-2004/PY,PRY,AY AND L98


     FILE 'REGISTRY' ENTERED AT 14:29:39 ON 23 MAR 2010

=> D L25 QUE STAT
L19             STR
```

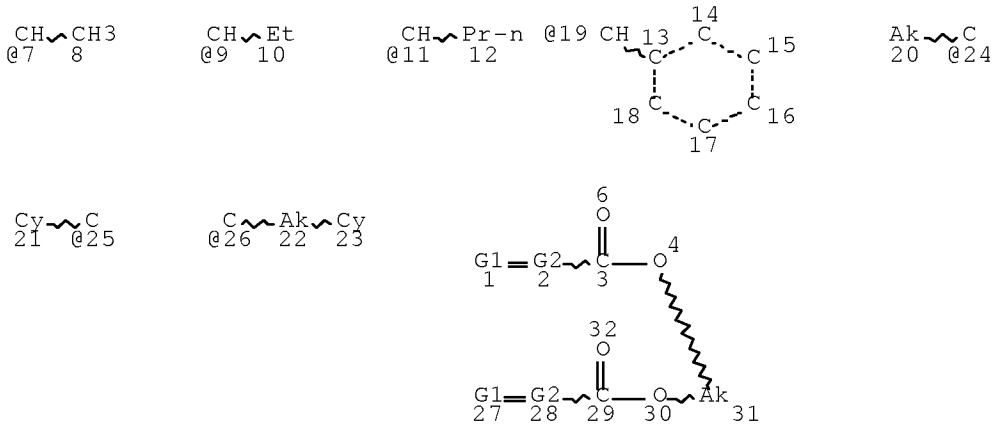



```
VAR G1=CH2/7/9/11/19
VAR G2=24/25/26/CH
NODE ATTRIBUTES:
NSPEC   IS RC     AT   5
CONNECT IS E1  RC AT  20
CONNECT IS E2  RC AT  22
DEFAULT MLEVEL IS ATOM
GGCAT   IS SAT  AT  20
GGCAT   IS UNS  AT  21
GGCAT   IS SAT  AT  22
GGCAT   IS UNS  AT  23
```

```
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS X6 C  AT  20
ECOUNT  IS X6 C  AT  22

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  26

STEREO ATTRIBUTES: NONE
L20             SCR 2043
L22      335107 SEA FILE=REGISTRY SSS FUL L19 AND L20
L23             STR
```




```
VAR G1=CH2/7/9/11/19
VAR G2=24/25/26/CH
NODE ATTRIBUTES:
CONNECT IS E1  RC AT  20
CONNECT IS E2  RC AT  22
DEFAULT MLEVEL IS ATOM
GGCAT   IS SAT  AT  20
GGCAT   IS UNS  AT  21
GGCAT   IS SAT  AT  22
GGCAT   IS UNS  AT  23
GGCAT   IS SAT  AT  31
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS X6 C  AT  20
ECOUNT  IS X6 C  AT  22
ECOUNT  IS M2-X4 C  AT  31

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  31

STEREO ATTRIBUTES: NONE
L25       21469 SEA FILE=REGISTRY SUB=L22 SSS FUL L23

100.0% PROCESSED  108797 ITERATIONS                     21469 ANSWERS
SEARCH TIME: 00.00.02


=> D L30 QUE STAT
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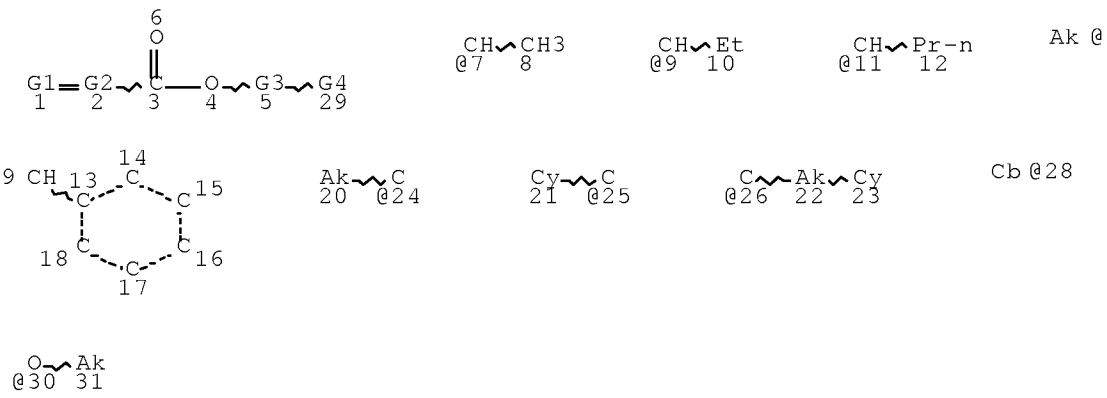
L17 STR



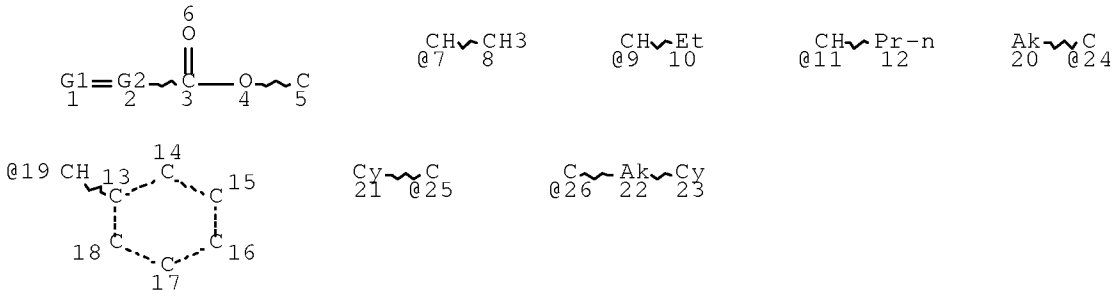
Page 1-A

27

Page 1-B
VAR G1=CH2/7/9/11/19
VAR G2=24/25/26
VAR G3=27/28
VAR G4=COOH/N/OH/30/SO3H/S
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 20
CONNECT IS E2 RC AT 22
CONNECT IS E1 RC AT 31
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 20
GGCAT IS UNS AT 21
GGCAT IS SAT AT 22
GGCAT IS UNS AT 23
GGCAT IS SAT AT 31
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS X6 C AT 20
ECOUNT IS X6 C AT 22
ECOUNT IS X10 C AT 27
ECOUNT IS X10 C AT 28
ECOUNT IS X8 C AT 31

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 31

STEREO ATTRIBUTES: NONE
L19 STR



VAR G1=CH2/7/9/11/19
VAR G2=24/25/26/CH
NODE ATTRIBUTES:
NSPEC IS RC AT 5
CONNECT IS E1 RC AT 20
CONNECT IS E2 RC AT 22
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 20
GGCAT IS UNS AT 21
GGCAT IS SAT AT 22
GGCAT IS UNS AT 23
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS X6 C AT 20
ECOUNT IS X6 C AT 22

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 26

STEREO ATTRIBUTES: NONE
L20 SCR 2043
L22 335107 SEA FILE=REGISTRY SSS FUL L19 AND L20
L30 90563 SEA FILE=REGISTRY SUB=L22 SSS FUL L17

100.0% PROCESSED 304047 ITERATIONS 90563 ANSWERS
SEARCH TIME: 00.00.06

=> FIL HCAP
FILE 'HCAPLUS' ENTERED AT 14:30:05 ON 23 MAR 2010
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

=> D L97 1 IBIB ABS HITSTR HITIND RETABLE

L97 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:1103696 HCAPLUS Full-text
DOCUMENT NUMBER: 143:370024
TITLE: Process for manufacturing an

electrochemical device
INVENTOR(S): Sin Xicola, Agustin; Dubitsky, A. Yuri; Albizzati, Enrico; Kopnin, Evgeny; Roda, Elena
PATENT ASSIGNEE(S): Pirelli & C. S.p.A., Italy
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005095270	A1	20051013	WO 2004-EP3618	20040330
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1730074	A1	20061213	EP 2004-724294	20040330
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
US 20080233030	A1	20080925	US 2008-593481	20080422
PRIORITY APPLN. INFO.:			WO 2004-EP3618 W	20040330

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Process for manufacturing an electrochem. device including a cathode, an anode and at least one electrolyte membrane disposed between said anode and said cathode, wherein at least one of the cathode, the anode and the electrolyte membrane, contains at least a ceramic material.

IT 39469-38-0P 117655-32-0P, Cerium gadolinium oxide (Ce0.8Gd0.2O1.9)
(manufacturing electrochem. device comprising)
RN 39469-38-0 HCAPLUS
CN Nickel alloy, base, Ni 53,Cu 47 (CA INDEX NAME)

Component	Component Percent	Component Registry Number
Ni	53	7440-02-0
Cu	47	7440-50-8

RN 117655-32-0 HCAPLUS
CN Cerium gadolinium oxide (Ce0.8Gd0.2O1.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.9	17778-80-2
Gd	0.2	7440-54-2
Ce	0.8	7440-45-1

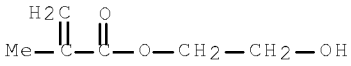
IT 148595-66-8P, Cobalt iron lanthanum strontium oxide (Co0.2Fe0.8La0.6Sr0.4O3)
(oxygen deficient; manufacturing electrochem. device comprising)
RN 148595-66-8 HCAPLUS
CN Cobalt iron lanthanum strontium oxide (Co0.2Fe0.8La0.6Sr0.4O3) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Co	0.2	7440-48-4
Sr	0.4	7440-24-6
La	0.6	7439-91-0
Fe	0.8	7439-89-6

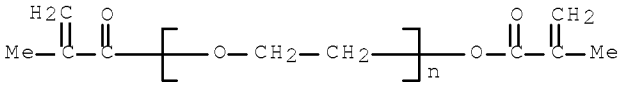
IT 256425-72-6P, Cobalt iron strontium oxide (Co0.5FeSrO3)
(oxygen excess; manufacturing electrochem. device comprising)
RN 256425-72-6 HCAPLUS
CN Cobalt iron strontium oxide (Co0.5FeSrO3) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	3	17778-80-2
Co	0.5	7440-48-4
Sr	1	7440-24-6
Fe	1	7439-89-6

IT 868-77-9, 2-Hydroxyethylmethacrylate 25852-47-5, Polyethylene glycol dimethacrylate
(use manufacturing electrochem. device by sol-gel method)
RN 868-77-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester (CA INDEX NAME)



RN 25852-47-5 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



IC ICM C01B0013-32
ICS H01M0008-12; H01M0004-88
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

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     Section cross-reference(s): 48, 57
ST   electrolyzer membrane cell ceramic
IT   Electric apparatus
        (electrochem.; manufacturing electrochem. device)
IT   Ceramics
     Cermets
       Nanoparticles
        (manufacturing electrochem. device comprising)
IT   Sol-gel processing
        (manufacturing electrochem. device comprising using)
IT   Electrolytic cells
        (membrane; manufacturing electrochem. device)
IT   Calcination
        (of gel in manufacturing electrochem. device by sol-
        gel method)
IT   Sintering
        (of powder formed from gel in manufacturing electrochem. device
        by sol-gel method)
IT   Fuel cells
        (solid oxide; manufacturing electrochem. device comprising)
IT   39469-38-0P   117655-32-0P, Cerium gadolinium
     oxide (Ce0.8Gd0.2O1.9)
        (manufacturing electrochem. device comprising)
IT   148595-66-8P, Cobalt iron lanthanum strontium oxide
     (Co0.2Fe0.8La0.6Sr0.4O3)
        (oxygen deficient; manufacturing electrochem. device
        comprising)
IT   256425-72-6P, Cobalt iron strontium oxide (Co0.5FeSrO3)
        (oxygen excess; manufacturing electrochem. device comprising)
IT   868-77-9, 2-Hydroxyethylmethacrylate   25852-47-5,
     Polyethylene glycol dimethacrylate
        (use manufacturing electrochem. device by sol-
        gel method)
RETABLE
```

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Chimie, R	1989			FR 2628664 A	HCAPLUS
Montedison Spa	1988			EP 0255702 A	HCAPLUS
Ong, E	1997			US 5698483 A	HCAPLUS
Rohm	1995			EP 0685435 A	HCAPLUS
Tarancon, A	2003	118	256	JOURNAL OF POWER SOU	HCAPLUS
Yamaguchi, T	1998			US 5788950 A	HCAPLUS

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=> D L99 1-2 IBIB ABS HITSTR HITIND RETABLE

L99  ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:        2005:1293909  HCAPLUS  Full-text
DOCUMENT NUMBER:         144:38340
TITLE:                   Preparation method of composite oxygen-ion
                         electrolyte film by sol-gel
                         process with rapid thermal processing
INVENTOR(S):             Jiang, Xuening; Zhang, Qingyu; Chen, Chonglin
PATENT ASSIGNEE(S):      Dalian University of Technology, Peop. Rep. China
SOURCE:                  Faming Zhuanli Shenqing Gongkai Shuomingshu, 7 pp.
                         CODEN: CNXXEV
DOCUMENT TYPE:           Patent
LANGUAGE:                Chinese
FAMILY ACC. NUM. COUNT:  1
```

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1571203	A	20050126	CN 2004-10020456 <--	20040424
PRIORITY APPLN. INFO.:			CN 2004-10020456 <--	20040424

AB The invention falls into the tech. field of novel functional materials and relates to a preparation method of composite oxygen-ion electrolyte film. A sol-gel process with rapid thermal processing was used to prepare multilayer film A/(B/A)n (A and B resp. stand for YSZ or RCO, n ≥ 1). The preparation of each layer comprises preparing sol precursor, rotation coating, and carrying out fast cycle heat treatment to form a layer of the film, wherein YSZ layer with a thickness of 10-400 nm was prepared from ZrOCl2·8H2O and Y(NO3)3·6H2O, ammonia water as precipitant, and dilute hydrochloric acid for adjusting pH value, and ethylene glycol as metal-chelator, and RCO layer with a thickness of 10-400 nm was prepared from Ce(NO3)3·6H2O, R2O3, oxalic acid as precipitant and citric acid as metal-chelator. By repeating the above preparation processes, high-quality densified nano composite electrolyte multilayer film with uniform thickness can be obtained. By the adoption of the method, stress and deficiencies of film caused by long high-temperature heat treatment in the conventional sol-gel process can be avoided, and the cycle of film formation can be shortened, resulting in increased efficiency and reduced cost.

IT 117655-32-0P, Cerium gadolinium oxide (Ce0.8Gd0.2O1.9)
(preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process with rapid thermal processing)

RN 117655-32-0 HCAPLUS

CN Cerium gadolinium oxide (Ce0.8Gd0.2O1.9) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.9	17778-80-2
Gd	0.2	7440-54-2
Ce	0.8	7440-45-1

IC ICM H01M0008-02
ICS H01M0008-10

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST oxygen ion electrolyte film prepn sol gel thermal processing; fuel cell multilayer zirconium rare earth oxide electrolyte prepn

IT Sol-gel processing
(coating; preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process with rapid thermal processing)

IT Solid electrolytes
(multilayer films; preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process with rapid thermal processing)

IT Films
(multilayer; preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process with rapid thermal processing)

IT Fuel cell electrolytes
Heat treatment
(preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process

with rapid thermal processing)
IT Rare earth oxides
(preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process
with rapid thermal processing)
IT Coating process
(sol-gel; preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process with rapid thermal processing)
IT 7440-02-0, Nickel, uses
(anode; preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process with rapid thermal processing)
IT 144-62-7, Oxalic acid, reactions 7699-43-6, Zirconium dichloride oxide 10108-73-3, Cerium nitrate 10361-93-0, Yttrium nitrate
(preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process
with rapid thermal processing)
IT 7047-99-6P, Cerium oxalate 12064-62-9P, Gadolinium oxide (Gd2O3)
(preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process
with rapid thermal processing)
IT 55575-02-5P, Cerium gadolinium oxide 64417-98-7P, Yttrium zirconium oxide 106390-87-8P, Yttrium zirconium oxide (Y0.4Zr0.8O2.2)
106830-29-9P, Yttrium zirconium oxide (Y0.2Zr0.9O2.1)
117655-32-0P, Cerium gadolinium oxide (Ce0.8Gd0.2O1.9)
152233-89-1P, Cerium gadolinium oxide (Ce0.9Gd0.1O1.95)
(preparation method of composite oxygen ion electrolyte film for fuel cell by sol gel process
with rapid thermal processing)

L99 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:773935 HCAPLUS Full-text
DOCUMENT NUMBER: 141:246144
TITLE: Electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochemical cells
INVENTOR(S): Takeuchi, Esther S.; Leising, Randolph; Rubino, Robert; Hong, Gan
PATENT ASSIGNEE(S): Wilson Greatbatch Technologies, Inc., USA
SOURCE: Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1460700	A2	20040922	EP 2004-251586 <--	20040319
EP 1460700	A3	20050817		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
US 20040185346	A1	20040923	US 2003-391885 <--	20030319
CA 2460214	A1	20040919	CA 2004-2460214 <--	20040308
JP 2004288633	A	20041014	JP 2004-79829	20040319

<--
PRIORITY APPLN. INFO.: US 2003-391885 A 20030319
<--
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB A new cathode design having a second cathode active material of a relatively high energy d. but of a relatively low rate capability sandwiched between two current collectors with a first cathode active material having a relatively low energy d. but of a relatively high rate capability in contact with the opposite sides of the two current collectors, is disclosed. At least the first cathode active material is of particles having an average diameter less than about 1 μm. The present cathode design is useful for powering an implantable medical device requiring a high rate discharge application.

IT 12190-79-3, Cobalt lithium oxide colio2
(electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

RN 12190-79-3 HCAPLUS

CN Cobalt lithium oxide (CoLiO2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Co	1	7440-48-4
Li	1	7439-93-2

IC ICM H01M0004-02
ICS H01M0004-36; H01M0010-40; H01M0004-48; H01M0004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 63, 72

ST implantable medical device battery; battery electrode metal vanadium oxide nanoparticle

IT Heart
(cardiac defibrillator; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Combustion
(chemical vapor deposition; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Vapor deposition process
(chemical, combustion; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Carbonaceous materials (technological products)
(coating; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Battery cathodes
Decomposition
Drug delivery systems
Hydrothermal reactions
Nanoparticles
Sol-gel processing
(electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Alkali metals, uses
Carbon black, uses
Coke
Polyacetylenes, uses
Polyanilines

Polysulfides
(electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Bone
(healing implants; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Medical goods
(implantable; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Prosthetic materials and Prosthetics
(implants, artificial heart pacemaker; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Hearing
(implants; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Secondary batteries
(lithium; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Heart
(pacemaker, artificial; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Thermal decomposition
(photo-; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Conducting polymers
(polypyrroles; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT Conducting polymers
(polythiophenes; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT 7782-42-5, Graphite, uses
(coating; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT 7440-06-4, Platinum, uses 7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 7440-57-5, Gold, uses 12597-68-1, Stainless steel, uses
(current collector; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT 1310-65-2, Lithium hydroxide 7761-88-8, Silver nitrate, processes
(electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT 108-32-7, Propylene carbonate 110-71-4, 1, 2-Dimethoxyethane 1313-13-9, Manganese dioxide, uses 1314-62-1, Vanadium oxide (V2O5), uses 1317-33-5, Molybdenum disulfide, uses 1317-37-9, Iron sulfide fes 1344-70-3, Copper oxide 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-66-6, Zinc, uses 7784-01-2, Silver chromate ag2cro4 7789-19-7, Copper fluoride (CuF2) 11105-02-5, Silver vanadium oxide 12019-06-6, Copper oxide (CuO2) 12031-65-1,

Lithium nickel oxide linio2 12034-78-5, Niobium selenide nbse3 12037-42-2, Vanadium oxide v6o13 12039-07-5, Titanium sulfide Tis 12068-85-8, Iron sulfide fes2 12162-79-7, Lithium manganese oxide limno2 12190-79-3, Cobalt lithium oxide colio2 12789-09-2, Copper vanadium oxide 18282-10-5, Tin oxide sno2 20667-12-3, Silver oxide (Ag2O) 21324-40-3, Lithium hexafluorophosphate 21651-19-4, Tin oxide sno 22205-45-4, Copper sulfide cu2s 29935-35-1, Lithium hexafluoroarsenate 51311-17-2, CArbon fluoride 113443-18-8, Silicon oxide (SiO) 155645-82-2, Silver oxide ag2o2 181183-66-4, Copper Silver vanadium oxide 528841-14-7, Tin borate oxide phosphate
(electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT 7439-93-2, Lithium, uses
(electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem. cells)

IT 7440-44-0, Carbon, uses
(glassy; electrode having metal vanadium oxide nanoparticles for alkali metal-containing electrochem . cells)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Anon				WO 0135473 A1	HCAPLUS
Anon				EP 1207567 A2	HCAPLUS

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

=> D L100 1-6 IBIB ABS HITSTR HITIND RETABLE

L100 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:1350091 HCAPLUS Full-text
DOCUMENT NUMBER: 144:72277
TITLE: Membrane-electrode assembly for fuel cell
INVENTOR(S): Kim, Hee-Tak; Min, Myoung-Ki
PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20050287419	A1	20051229	US 2005-126923 <--	20050511
KR 536257	B1	20051206	KR 2004-49418 <--	20040629
CN 1716664	A	20060104	CN 2005-10075563 <--	20050606
CN 100452506	C	20090114		
JP 2006019290	A	20060119	JP 2005-190177 <--	20050629
JP 4369904	B2	20091125		
PRIORITY APPLN. INFO.:			KR 2004-49418 A <--	20040629

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Disclosed is a membrane-electrode assembly for a fuel cell including an anode and a cathode with a polymer electrolyte membrane placed between them. At least one of the anode and the cathode includes a catalyst layer including a catalyst metal with a hydrophilic polymer layer on the catalyst metal.

IT 12623-53-9 12779-05-4 12782-98-8
50942-39-7
(membrane-electrode assembly for fuel cell)

RN 12623-53-9 HCAPLUS

CN Nickel alloy, nonbase, Ni,Pt (CA INDEX NAME)

Component	Component Registry Number
Ni	7440-02-0
Pt	7440-06-4

RN 12779-05-4 HCAPLUS

CN Platinum alloy, nonbase, Pt,Ru (CA INDEX NAME)

Component	Component Registry Number
Pt	7440-06-4
Ru	7440-18-8

RN 12782-98-8 HCAPLUS

CN Copper alloy, nonbase, Cu,Pt (CA INDEX NAME)

Component	Component Registry Number
Cu	7440-50-8
Pt	7440-06-4

RN 50942-39-7 HCAPLUS

CN Chromium alloy, nonbase, Cr,Pt (CA INDEX NAME)

Component	Component Registry Number
Cr	7440-47-3
Pt	7440-06-4

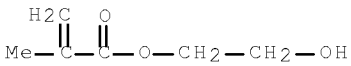
IT 25249-16-5 26570-48-9, Polyethylene oxide diacrylate
(membrane-electrode assembly for fuel cell)

RN 25249-16-5 HCAPLUS

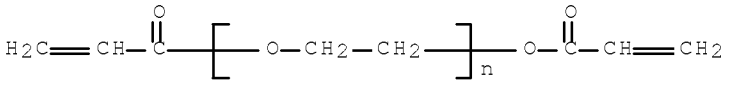
CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, homopolymer (CA INDEX NAME)

CM 1

CRN 868-77-9
CMF C6 H10 O3



RN 26570-48-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(1-oxo-2-propen-1-yl)-ω-[(1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



IC ICM H01M0008-00
INCL 429040000; 429012000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST fuel cell membrane electrode assembly
IT Catalysts
(electrocatalysts; membrane-electrode assembly for fuel cell)
IT Polyoxyalkylenes, uses
(fluorine- and sulfo-containing, ionomers; membrane-electrode assembly for fuel cell)
IT Fuel cell electrodes
Fuel cell electrolytes
Fuel cells
(membrane-electrode assembly for fuel cell)
IT Transition metal alloys
(membrane-electrode assembly for fuel cell)
IT Polyamides, uses
(membrane-electrode assembly for fuel cell)
IT Polyethers, uses
(membrane-electrode assembly for fuel cell)
IT Polyoxyalkylenes, uses
(membrane-electrode assembly for fuel cell)
IT Alcohols, uses
(polyhydric; membrane-electrode assembly for fuel cell)
IT Carboxylic acids, uses
Sulfonic acids, uses
(polymers; membrane-electrode assembly for fuel cell)
IT Fluoropolymers, uses
(polyoxyalkylene-, sulfo-containing, ionomers; membrane-electrode assembly for fuel cell)
IT Ionomers
(polyoxyalkylenes, fluorine- and sulfo-containing; membrane-electrode assembly for fuel cell)
IT Polymers, uses
(sulfo-containing; membrane-electrode assembly for fuel cell)
IT 7440-06-4, Platinum, uses 12623-53-9 12779-05-4 12782-98-8 50942-39-7
(membrane-electrode assembly for fuel cell)
IT 9000-11-7, CMC 9002-81-7, Polymethylene oxide 9002-89-5, Polyvinyl alcohol 9003-01-4, Polyacrylic acid 9003-05-8, Polyacrylamide

9004-32-4, Sodium CMC 9004-34-6, Cellulose, uses 9004-67-5, Methyl cellulose 25014-12-4, Polymethacrylamide 25087-26-7, Polymethacrylic acid 25213-24-5, Vinyl acetate-vinyl alcohol copolymer 25249-16-5 25322-68-3 25322-69-4, Polypropylene oxide 26022-14-0, Poly(hydroxyethyl acrylate) 26570-48-9, Polyethylene oxide diacrylate 41206-69-3 50851-57-5, Polystyrene sulfonic acid 62487-95-0, Poly(hydroxymethyl acrylate)
(membrane-electrode assembly for fuel cell)

IT 163294-14-2, Nafion 112
(membrane-electrode assembly for fuel cell)

L100 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:693430 HCAPLUS Full-text
DOCUMENT NUMBER: 137:235216
TITLE: Nonaqueous electrolyte battery
INVENTOR(S): Imachi, Naoki; Nakane, Ikuro; Oikawa, Satoshi
PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002260738	A	20020913	JP 2001-55155 <--	20010228
JP 3619784	B2	20050216		
PRIORITY APPLN. INFO.:			JP 2001-55155 <--	20010228

OTHER SOURCE(S): MARPAT 137:235216

AB The battery is a secondary Li battery using a nonaq. electrolyte solution-containing polymer electrolyte, hardened by a composition containing acryloyl group CH2:CRCOO- (R = H or alkyl group), and a radical polymerization initiator, which draws H from the acryloyl group at a cathode potential ≥4.4V. The initiator is preferably R4CHR5R6, where R6 = Ph or aromatic group, R4 and R5 = H, alkyl, alkenyl, alkynyl, aralkyl, aryl, or heterocyclic groups and may join together forming a ring. The cathode potential induced polymerization increased battery safety.

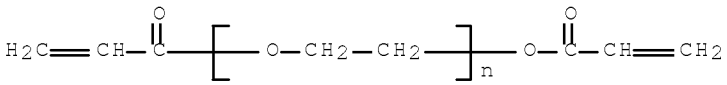
IT 57636-10-9, Poly(ethylene glycol) diacrylate, homopolymer 69067-16-9 87105-87-1 94457-89-3, Poly(propylene glycol) diacrylate, homopolymer
(secondary lithium batteries containing cathode potential induced initiators for polymerization of electrolytes for safety)

RN 57636-10-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(1-oxo-2-propen-1-yl)-ω-[(1-oxo-2-propen-1-yl)oxy]-, homopolymer (CA INDEX NAME)

CM 1

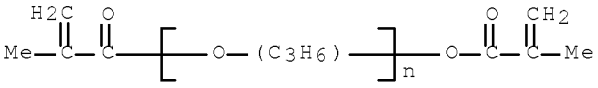
CRN 26570-48-9
CMF (C2 H4 O)n C6 H6 O3
CCI PMS



RN 69067-16-9 HCAPLUS
CN Poly[oxy(methyl-1,2-ethanediyl)], α-(2-methyl-1-oxo-2-propen-1-yl)-ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-, homopolymer (CA INDEX NAME)

CM 1

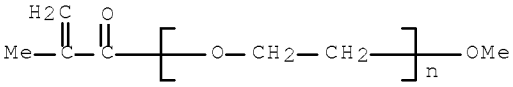
CRN 25852-49-7
CMF (C3 H6 O)n C8 H10 O3
CCI IDS, PMS



RN 87105-87-1 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-methoxy-, homopolymer (CA INDEX NAME)

CM 1

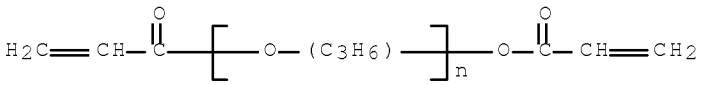
CRN 26915-72-0
CMF (C2 H4 O)n C5 H8 O2
CCI PMS



RN 94457-89-3 HCAPLUS
CN Poly[oxy(methyl-1,2-ethanediyl)], α-(1-oxo-2-propen-1-yl)-ω-[(1-oxo-2-propen-1-yl)oxy]-, homopolymer (CA INDEX NAME)

CM 1

CRN 52496-08-9
CMF (C3 H6 O)n C6 H6 O3
CCI IDS, PMS



IT 39300-70-4, Lithium nickel oxide 39457-42-6, Lithium manganese oxide 52627-24-4, Cobalt lithium oxide
(secondary lithium batteries containing cathode potential induced initiators for polymerization of electrolytes for safety)
RN 39300-70-4 HCAPLUS
CN Lithium nickel oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Ni	x	7440-02-0
Li	x	7439-93-2

RN 39457-42-6 HCAPLUS
CN Lithium manganese oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Mn	x	7439-96-5
Li	x	7439-93-2

RN 52627-24-4 HCAPLUS
CN Cobalt lithium oxide (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	x	17778-80-2
Co	x	7440-48-4
Li	x	7439-93-2

IC ICM H01M0010-40
ICS H01M0004-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium battery polymer electrolyte radical polymn initiator; safety cathode potential induced electrolyte polymn lithium battery; acryloyl polymer electrolyte secondary lithium battery
IT Secondary batteries
(lithium; secondary lithium batteries containing cathode potential induced initiators for polymerization of electrolytes for safety)
IT Polymerization
(radical; secondary lithium batteries containing cathode potential induced initiators for polymerization of electrolytes for safety)
IT Safety
(secondary lithium batteries containing cathode potential induced initiators for polymerization of electrolytes for

safety)
IT 57636-10-9, Poly(ethylene glycol) diacrylate, homopolymer
69067-16-9 87105-87-1 94457-89-3,
Poly(propylene glycol) diacrylate, homopolymer 97008-69-0
(secondary lithium batteries containing cathode
potential induced initiators for polymerization of electrolytes for
safety)
IT 39300-70-4, Lithium nickel oxide 39457-42-6,
Lithium manganese oxide 52627-24-4, Cobalt lithium oxide
(secondary lithium batteries containing cathode
potential induced initiators for polymerization of electrolytes for
safety)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate
21324-40-3, Lithium hexafluorophosphate
(secondary lithium batteries containing cathode
potential induced initiators for polymerization of electrolytes for
safety)
IT 827-52-1, Cyclohexylbenzene
(secondary lithium batteries containing cathode
potential induced initiators for polymerization of electrolytes for
safety)

L100 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:172424 HCAPLUS Full-text
DOCUMENT NUMBER: 136:234631
TITLE: Gel electrolyte lithium battery with improved safety and reliability
INVENTOR(S): Lee, Yong-beom
PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020028388	A1	20020307	US 2001-938302 <--	20010824
US 6680147	B2	20040120		
KR 2002019212	A	20020312	KR 2000-52364 <--	20000905
KR 2002019213	A	20020312	KR 2000-52365 <--	20000905
CN 1341977	A	20020327	CN 2001-123114 <--	20010713
CN 100414765	C	20080827		
JP 2002151150	A	20020524	JP 2001-269134 <--	20010905
JP 4418134	B2	20100217		

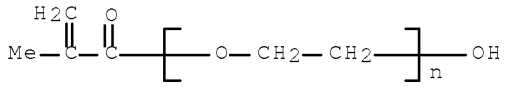
PRIORITY APPLN. INFO.: KR 2000-52364 A 20000905 <--
KR 2000-52365 A 20000905 <--
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB A lithium battery which includes an electrode assembly having a cathode, an anode and a separator interposed between the cathode and the anode, a gel electrolyte prepared by curing a composition consisting of a polysiloxane compound or a polysiloxane-polyoxyalkylene compound, a polyethylene glycol

derivative, and an organic solvent containing a lithium salt. The lithium battery has improved reliability and safety since a swelling phenomenon due to an electrolytic solution is effectively suppressed and leakage of the electrolytic solution is prevented.

IT 25736-86-1, Polyethylene glycol monomethacrylate
25852-47-5, Polyethylene glycol dimethacrylate
26570-48-9, Polyethylene glycol diacrylate
(gel electrolyte lithium battery with improved safety and reliability)

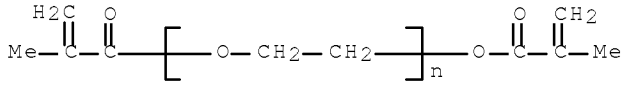
RN 25736-86-1 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-hydroxy- (CA INDEX NAME)



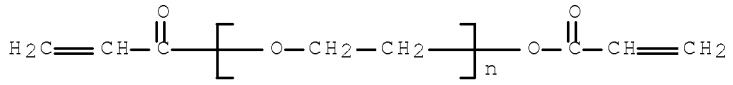
RN 25852-47-5 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



RN 26570-48-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(1-oxo-2-propen-1-yl)-ω-[(1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



IT 12190-79-3, Cobalt lithium oxide colio2
(gel electrolyte lithium battery with improved safety and reliability)

RN 12190-79-3 HCAPLUS

CN Cobalt lithium oxide (CoLiO2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Co	1	7440-48-4
Li	1	7439-93-2

IC ICM H01M0010-40
INCL 429303000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST lithium battery gel electrolyte improved safety reliability; safety improvement lithium battery gel electrolyte
IT Polysiloxanes, uses
(acrylic; gel electrolyte lithium battery with improved safety and reliability)
IT Polyoxyalkylenes, uses
(derivative; gel electrolyte lithium battery with improved safety and reliability)
IT Battery electrolytes
Polymer electrolytes
Safety
(gel electrolyte lithium battery with improved safety and reliability)
IT Polysiloxanes, uses
(gel electrolyte lithium battery with improved safety and reliability)
IT Fluoropolymers, uses
(gel electrolyte lithium battery with improved safety and reliability)
IT Secondary batteries
(lithium; gel electrolyte lithium battery with improved safety and reliability)
IT Carbon fibers, uses
(meso-; gel electrolyte lithium battery with improved safety and reliability)
IT Polymerization
(photopolymn., or electron-beam; gel electrolyte lithium battery with improved safety and reliability)
IT Electron beams
UV radiation
(polymerization induced by; gel electrolyte lithium battery with improved safety and reliability)
IT Polysiloxanes, uses
(polyoxyalkylene-; gel electrolyte lithium battery with improved safety and reliability)
IT Polyoxyalkylenes, uses
(polysiloxane-; gel electrolyte lithium battery with improved safety and reliability)
IT Polymerization
(thermal; gel electrolyte lithium battery with improved safety and reliability)
IT 7440-44-0, Super p, uses
(activated; gel electrolyte lithium battery with improved safety and reliability)
IT 25322-68-3D, Polyethylene glycol, derivative 25736-86-1, Polyethylene glycol monomethacrylate 25852-47-5, Polyethylene glycol dimethacrylate 26403-58-7, Polyethylene glycol monoacrylate 26570-48-9, Polyethylene glycol diacrylate
(gel electrolyte lithium battery with improved safety and reliability)
IT 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 112-49-2, Triglyme 143-24-8, Tetraglyme 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 872-36-6, Vinylene carbonate 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses 7791-03-9, Lithium perchlorate 9002-88-4, Polyethylene

12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 90076-65-6
(gel electrolyte lithium battery with improved safety and reliability)

IT 28961-43-5D, ethoxylated
(gel electrolyte lithium battery with improved safety and reliability)

IT 402934-96-7P, α-[Dimethyl(3-methoxypropyl)silyl]-ω-[[dimethyl[3-[(2-methyl-1-oxo-2-propenyl)oxy]propoxy]silyl]oxy]poly[oxy(dimethylsilylene)]-polyethylene glycol dimethacrylate-polyethylene glycol monomethacrylate-ethoxylated trimethylolpropane triacrylate copolymer 402934-98-9P
(gel electrolyte lithium battery with improved safety and reliability)

IT 24937-79-9, Pvdf
(gel electrolyte lithium battery with improved safety and reliability)

IT 78-67-1, Azobisisobutyronitrile 94-36-0, Benzoyl peroxide, processes 105-74-8, Lauroyl peroxide 110-22-5, Acetyl peroxide 119-61-9, Benzophenone, processes
(polymerization initiator; gel electrolyte lithium battery with improved safety and reliability)

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (14 CITINGS)

L100 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1999:407111 HCAPLUS Full-text
DOCUMENT NUMBER: 131:102668
TITLE: Polymerizable compositions containing acid-sensitive polymerization initiators and their application to solid electrolytes
INVENTOR(S): Takeuchi, Masataka; Naijo, Shuichi; Tokita, Koji
PATENT ASSIGNEE(S): Showa Denko K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11171912	A	19990629	JP 1997-343252 <--	19971212
PRIORITY APPLN. INFO.:			JP 1997-343252 <--	19971212

OTHER SOURCE(S): MARPAT 131:102668

AB Title compns. contain ≥1 polymerizable compds. and ≥1 acid-sensitive polymerization initiator precursors and the solid electrolytes are those prepared by polymerization of the compds. after decomposition of the polymerization initiator precursors by acids or heating. The electrolytes are suitable for battery electrodes containing electrode active masses, for elec. double layer capacitors containing polar materials, and the batteries and capacitors themselves and manufacture of them are also claimed. Thus, polyethylene glycol dimethacrylate (Blemmer PDE 600) 1.2, Al2O3 (Aluminum oxide C) 0.33, ethylene carbonate 1.8, Et Me carbonate 4.2, LiPF6 0.60, and Bu4N+ BuPh3B- 0.005 g were mixed under Ar, applied on a PET film, and left for

30 min in Ar to give a composite film having ion conductivity 2.5 + 10-3 and 0.7 + 10-3 S/cm at 25 and -20°, resp.

IT 12190-79-3, Lithium cobalt oxide (LiCoO2)
(cathode active mass; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

RN 12190-79-3 HCAPLUS

CN Cobalt lithium oxide (CoLiO2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Co	1	7440-48-4
Li	1	7439-93-2

IT 112760-18-6, KW 2200
(fillers; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

RN 112760-18-6 HCAPLUS

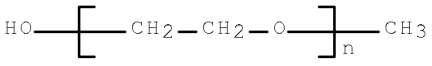
CN Aluminum magnesium oxide (Al0.3Mg0.7O1.15) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.15	17778-80-2
Mg	0.7	7439-95-4
Al	0.3	7429-90-5

IT 9004-74-4DP, Polyethylene glycol monomethyl ether, reaction product with isocyanatoethyl methacrylate, polymers
9051-34-7P 30674-80-7DP, reaction product with ethylene oxide-propylene oxide copolymer 87105-87-1P
(monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

RN 9004-74-4 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-methyl-ω-hydroxy- (CA INDEX NAME)



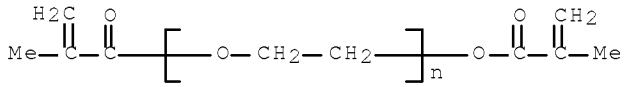
RN 9051-34-7 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-[(2-methyl-1-oxo-2-propenyl)oxy]-, homopolymer (CA INDEX NAME)

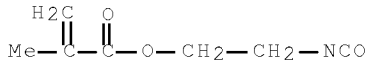
CM 1

CRN 25852-47-5
CMF (C2 H4 O)n C8 H10 O3

CCI PMS



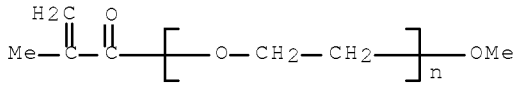
RN 30674-80-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-isocyanatoethyl ester (CA INDEX NAME)



RN 87105-87-1 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-methoxy-, homopolymer (CA INDEX NAME)

CM 1

CRN 26915-72-0
CMF (C2 H4 O)n C5 H8 O2
CCI PMS



IC ICM C08F0004-12
ICS C08F0299-00; H01B0001-12; H01G0009-025; H01M0004-02; H01M0004-04; H01M0004-06; H01M0006-18; H01M0010-40
CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 38, 52, 76
ST polymerizable compn acid sensitive polymn initiator; solid electrolyte monomer compn polymn initiator; polyethylene glycol dimethacrylate solid electrolyte precursor; butyltriphenylborate tetrabutylammonium polymn initiator precursor; battery electrode solid electrolyte polymerizable compn; double layer capacitor electrolyte polymerizable compn
IT Polycarbonates, preparation
Polyoxyalkylenes, preparation
(acrylic; monomer composition containing acid-sensitive polymerization initiator
precursors for solid electrolytes for batteries and double layer capacitors)
IT Fluoropolymers, uses
(anode; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT Capacitors
(double layer; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT Acids, uses
Alkali metal salts
Phosphonium compounds
Quaternary ammonium compounds, uses
Transition metal salts
(electrolytes; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT Carbon fibers, uses
(graphite, battery anode; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT Secondary batteries
(lithium; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT Polymerization catalysts
Solid electrolytes
(monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT 26403-58-7DP, polymer with ethylene oxide-propylene oxide copolymer adduct with isocyanatoethyl methacrylate
(Blemmer AE 400; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT 24937-79-9
(anode; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT 12190-79-3, Lithium cobalt oxide (LiCoO2)
(cathode active mass; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate
(electrolyte; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT 1344-28-1, Aluminum oxide (Al2O3), uses 112760-18-6, KW 2200
(fillers; monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT 143-66-8, Sodium tetraphenylborate 429-06-1, Tetraethylammonium tetrafluoroborate 120307-06-4, Tetrabutylammonium butyltriphenylborate 189947-86-2 228863-57-8
(monomer composition containing acid-sensitive polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT 9004-74-4DP, Polyethylene glycol monomethyl ether, reaction

product with isocyanatoethyl methacrylate, polymers
9051-34-7P 9082-00-2DP, Ethylene oxide-propylene oxide copolymer glycerin ether, reaction product with isocyanatoethyl methacrylate, polymers 30674-80-7DP, reaction product with ethylene oxide-propylene oxide copolymer 50862-75-4DP, Poly(oxycarbonyloxy-1,3-propanediyl), reaction product with isocyanatoethyl methacrylate, polymers 87105-87-1P 228863-58-9DP, reaction product with isocyanatoethyl methacrylate, polymers
(monomer composition containing acid-sensitive polymerization initiator precursors
for solid electrolytes for batteries and double layer capacitors)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 623-53-0, Ethyl methyl carbonate
(solvent; monomer composition containing acid-sensitive polymerization initiator
precursors for solid electrolytes for batteries and double layer capacitors)
OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

L100 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1999:407110 HCAPLUS Full-text
DOCUMENT NUMBER: 131:102667
TITLE: Electrochemically polymerizable compositions for solid electrolytes
INVENTOR(S): Takeuchi, Masataka; Ohkubo, Takashi; Yabe, Shoji
PATENT ASSIGNEE(S): Showa Denko K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11171910	A	19990629	JP 1997-343251 <--	19971212
PRIORITY APPLN. INFO.:			JP 1997-343251 <--	19971212

OTHER SOURCE(S): MARPAT 131:102667
AB Title compns. contain ≥1 polymerizable compds. and ≥1 electrochem. decomposable polymerization initiator precursors and the solid electrolytes are those prepared by polymerization of the compds. The electrolytes are suitable for battery electrodes containing electrode active masses, for elec. double layer capacitors containing polar materials, and the batteries and capacitors themselves and manufacture of them are also claimed. Thus, polyethylene glycol dimethacrylate (Blemmer PDE 600) 1.2, Al2O3 (Aluminum oxide C) 0.33, ethylene carbonate 1.8, Et Me carbonate 4.2, LiBF4 0.45, and Bu4N+ BuPh3B- 0.005 g were mixed under Ar to give title composition, which was applied on a Pt film then the film was laminated with another Pt film, charged (4 V) for 1 min, and left at room temperature for 15 min to give a composite film having ion conductivity 1.5 + 10-3 and 0.3 + 10-3 S/cm at 25 and -20°, resp.
IT 12190-79-3, Lithium cobalt oxide (LiCoO2)
(cathode active mass; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer

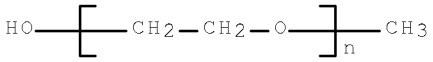
capacitors)
RN 12190-79-3 HCAPLUS
CN Cobalt lithium oxide (CoLiO2) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	2	17778-80-2
Co	1	7440-48-4
Li	1	7439-93-2

IT 112760-18-6, KW 2200
(fillers; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
RN 112760-18-6 HCAPLUS
CN Aluminum magnesium oxide (Al0.3Mg0.7O1.15) (CA INDEX NAME)

Component	Ratio	Component Registry Number
O	1.15	17778-80-2
Mg	0.7	7439-95-4
Al	0.3	7429-90-5

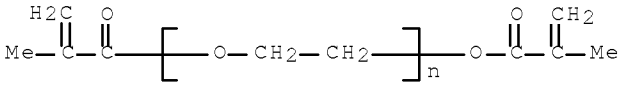
IT 9004-74-4DP, Polyethylene glycol monomethyl ether, reaction product with isocyantoethyl methacrylate, polymers
9051-34-7P 30674-80-7DP, reaction product with ethylene oxide-propylene oxide copolymer 87105-87-1P
(monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
RN 9004-74-4 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-methyl-ω-hydroxy- (CA INDEX NAME)



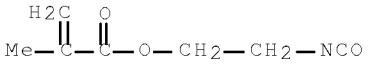
RN 9051-34-7 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-[(2-methyl-1-oxo-2-propenyl)oxy]-, homopolymer (CA INDEX NAME)

CM 1

CRN 25852-47-5
CMF (C2 H4 O)n C8 H10 O3
CCI PMS



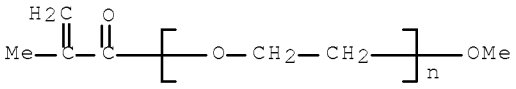
RN 30674-80-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-isocyanatoethyl ester (CA INDEX NAME)



RN 87105-87-1 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-methoxy-, homopolymer (CA INDEX NAME)

CM 1

CRN 26915-72-0
CMF (C2 H4 O)n C5 H8 O2
CCI PMS



IC ICM C08F0002-58
ICS H01B0001-12; H01G0009-025; H01M0004-02; H01M0004-04; H01M0004-06; H01M0006-18; H01M0010-40; C08F0020-10; C08F0299-02
CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 38, 52, 76
ST polymerizable compn electrochem decomposable polymn initiator; solid electrolyte monomer compn polymn initiator; polyethylene glycol dimethacrylate solid electrolyte precursor; butyltriphenylborate tetrabutylammonium polymn initiator precursor; battery electrode solid electrolyte polymerizable compn; double layer capacitor electrolyte polymerizable compn
IT Polycarbonates, preparation
Polyoxyalkylenes, preparation
(acrylic; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT Fluoropolymers, uses
Fluoropolymers, uses
(anode from; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT Capacitors
(double layer; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT Alkali metal salts
Quaternary ammonium compounds, uses
(electrolyte; monomer composition containing electrochem

decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT Acids, uses
Phosphonium compounds
Transition metal salts
(electrolytes; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT Carbon fibers, uses
(graphite, battery anode; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT Secondary batteries
(lithium; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT Polymerization catalysts
Solid electrolytes
(monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT 26403-58-7DP, polymer with ethylene oxide-propylene oxide copolymer adduct with isocyantoethyl methacrylate
(Blemmer AE 400; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT 24937-79-9
(anode from; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT 12190-79-3, Lithium cobalt oxide (LiCoO2)
(cathode active mass; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT 429-06-1, Tetraethylammonium tetrafluoroborate 69444-47-9, Triethylmethylammonium tetrafluoroborate
(electrolyte; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT 1344-28-1, Aluminum oxide (Al2O3), uses 112760-18-6, KW 2200
(fillers; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT 143-66-8, Sodium tetraphenylborate 120307-06-4, Tetrabutylammonium butyltriphenylborate 189947-86-2 228863-57-8
(monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)

IT 9004-74-4DP, Polyethylene glycol monomethyl ether, reaction product with isocyantoethyl methacrylate, polymers 9051-34-7P 9082-00-2DP, Ethylene oxide-propylene oxide copolymer glycerin ether, reaction product with isocyantoethyl methacrylate, polymers 30674-80-7DP, reaction product with ethylene oxide-propylene oxide copolymer 50862-75-4DP, Poly(oxycarbonyloxy-1,3-propanediyl), reaction product with isocyantoethyl methacrylate, polymers 87105-87-1P 228863-58-9DP, reaction product with isocyantoethyl methacrylate,

polymers
(monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 623-53-0, Ethyl methyl carbonate
(solvent; monomer composition containing electrochem decomposable polymerization initiator precursors for solid electrolytes for batteries and double layer capacitors)
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L100 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1994:683576 HCAPLUS Full-text
DOCUMENT NUMBER: 121:283576
ORIGINAL REFERENCE NO.: 121:51723a,51726a
TITLE: Ion conductive polymer batteries and their manufacture
INVENTOR(S): Takeda, Kazunari; Izuchi, Syuichi
PATENT ASSIGNEE(S): Yuasa Corporation, Japan
SOURCE: PCT Int. Appl., 67 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9419840	A1	19940901	WO 1994-JP246 <--	19940218
W: CA, JP, US RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 643434	A1	19950315	EP 1994-907069 <--	19940218
EP 643434	B1	19991020		
R: DE, FR, GB				
JP 3136610	B2	20010219	JP 1994-518818 <--	19940218
CA 2118401	C	20040817	CA 1994-2118401 <--	19940218
US 5658687	A	19970819	US 1994-318834 <--	19941018

PRIORITY APPLN. INFO.:	JP 1993-59631 <--	A	19930223
	JP 1993-62994 <--	A	19930225
	JP 1993-75262 <--	A	19930308
	JP 1993-75263 <--	A	19930308
	WO 1994-JP246 <--	W	19940218

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
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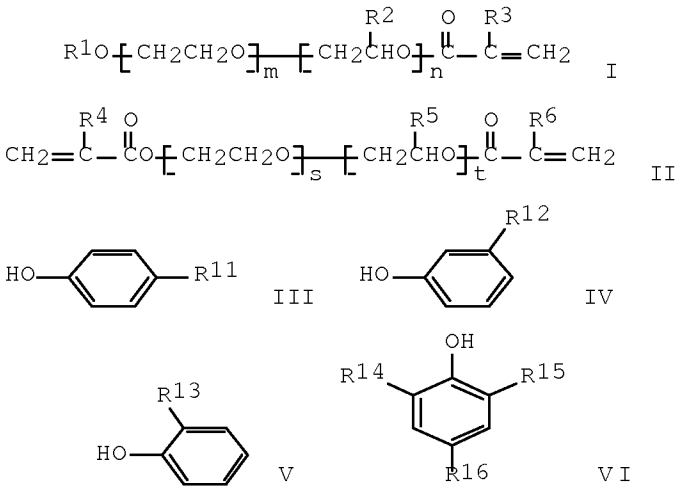


AB The batteries use ion conductive polymer cathodes, ion conductive electrolyte, and anodes which may also contain an ion conductive polymer; where the concentration of SO42-, p-toluenesulfonate ion, Cl-, PEG, acrylic acid and/or methacrylic acid, left from the manufacture of the polymer, in the batteries is controlled at <0.1 weight%. A 2nd type Li+ conductive batteries contain <0.1 weight% alkali metal ions other than Li+ and multivalent metal ions, and a 3rd type batteries contain <0.1 weight% radical capturing agents. The ion conductive polymer are the polymerization product of I (R1, R2, R3 = H or C>1 lower alkyl group, m ≥1, n ≥0, and n/m = 0-5) and/or II (R4, R5, R6 = H or C>1 lower alkyl group, s ≥3, t ≥0, and t/s = 0-5) in the presence of ≥1 ionic compound; the metal ions may Na+, K+, Ca2+, Fe2+, Cu2+, Ni3+, Fe3+, Co3+, or Cr3+; and the radical capturing agent is selected from III (R11 = C>1 alkyl, alkoxyl, or OH group), IV (R12 = C>1 alkyl, alkoxyl, or OH group), V (R13 = C>1 alkyl, alkoxyl, or OH group), and VI (R14, R15, R16 = C>1 alkyl, alkoxyl, or OH group). These batteries have high capacity and low internal impedance.

IT 12190-79-3, Lithium cobalt oxide (LiCoO2)
26570-48-9, Polyoxyethylene diacrylate
(batteries with electrodes and electrolytes containing ion conductive polymers and their manufacture)

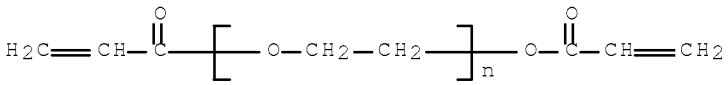
RN 12190-79-3 HCAPLUS

CN Cobalt lithium oxide (CoLiO2) (CA INDEX NAME)

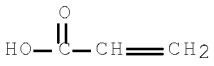
Component	Ratio	Component Registry Number
O	2	17778-80-2
Co	1	7440-48-4
Li	1	7439-93-2

RN 26570-48-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(1-oxo-2-propen-1-yl)-ω-[(1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



IT 79-10-7, Acrylic acid, miscellaneous
(impurity; ion conductive polymer batteries with suppressed content of impurities from polymer manufacture)
RN 79-10-7 HCAPLUS
CN 2-Propenoic acid (CA INDEX NAME)



IC ICM H01M0010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST battery ion conductive polymer electrode; electrolyte ion conductive polymer battery
IT Batteries, secondary
(ion conductive polymer batteries with suppressed content of impurities from polymer manufacture)
IT 7791-03-9, Lithium perchlorate 12190-79-3, Lithium cobalt oxide (LiCoO2) 26570-48-9, Polyoxyethylene diacrylate 32171-39-4
(batteries with electrodes and electrolytes containing ion conductive polymers and their manufacture)
IT 1313-13-9, Manganese dioxide, uses
(cathodes; batteries with electrodes and electrolytes containing ion conductive polymers and their manufacture)
IT 79-10-7, Acrylic acid, miscellaneous 14127-61-8, Calcium ion, miscellaneous 14701-22-5, Nickel ion, miscellaneous 14808-79-8, Sulfate, miscellaneous 15438-31-0, Iron ion (Fe2+), miscellaneous 16065-83-1, Chromium ion (Cr3+), miscellaneous 16722-51-3, p-Toluenesulfonate, miscellaneous 16887-00-6, Chloride, miscellaneous 17341-25-2, Sodium ion, miscellaneous 20074-52-6, Iron ion (Fe3+), miscellaneous 22541-53-3, Cobalt ion, miscellaneous 24203-36-9, Potassium ion, miscellaneous 25322-68-3, Polyoxyethylene
(impurity; ion conductive polymer batteries with suppressed content of impurities from polymer manufacture)
IT 128-37-0, 2,6-Di-tert-butyl-4-methyl phenol, uses 150-76-5, 4-Methoxyphenol
(radical capturing agent; ion conductive polymer batteries with suppressed content of impurities from polymer manufacture)
RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Anon				JP 1107471 A	
Anon				JP 2040867 A	
Anon				JP 4060304 B	HCAPLUS

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

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=>  D L101 1-6 IBIB ABS HITSTR HITIND RETABLE

L101 ANSWER 1 OF 6  HCAPLUS  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:         2003:755083  HCAPLUS  Full-text
DOCUMENT NUMBER:          139:279082
TITLE:                    Method of controlling voltage of nonaqueous
                          electrolyte lithium secondary battery
INVENTOR(S):              Sato, Takaya; Sakano, Kimiyo; Maruo, Tatsuya;
                          Nozu, Ryutaro; Takagi, Kentaro
PATENT ASSIGNEE(S):       Nisshin Spinning Co., Ltd., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 21 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------    --------
     JP 2003272706         A     20030926    JP 2002-67270           20020312
                                                     <--
     JP 4081569            B2    20080430
PRIORITY APPLN. INFO.:                       JP 2002-67270           20020312
                                                     <--
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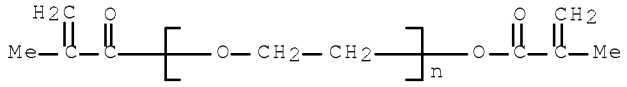
AB The process is to control voltage of a nonaq. electrolyte lithium secondary battery charged over the rated voltage, wherein a substance oxidized at the pos. electrode by the over charging is added to the nonaq. electrolyte and allowed to be oxidized, thereby controlling the battery voltage to 4.1-5.2 V.

IT 25852-47-5, NK Ester 9G 26915-72-0,
Methoxypolyethylene glycol methacrylate
(method of controlling voltage of nonaq. electrolyte lithium secondary battery)

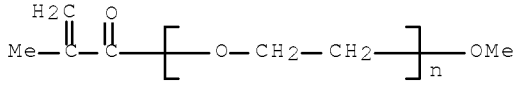
RN 25852-47-5 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



RN 26915-72-0 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-methoxy- (CA INDEX NAME)



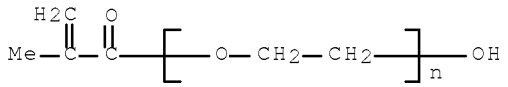
IC ICM H01M0010-40

ICS H01M0002-16; H01M0010-44
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST control voltage nonaq electrolyte lithium secondary battery
IT Secondary batteries
(lithium; method of controlling voltage of nonaq. electrolyte lithium secondary battery)
IT 3290-92-4, Trimethylolpropane trimethacrylate 15625-89-5, NK Ester A-TMPT 25721-76-0, Polyethylene glycol dimethacrylate 25852-47-5, NK Ester 9G 26915-72-0, Methoxypolyethylene glycol methacrylate 45103-58-0, NK Ester M20G
(method of controlling voltage of nonaq. electrolyte lithium secondary battery)

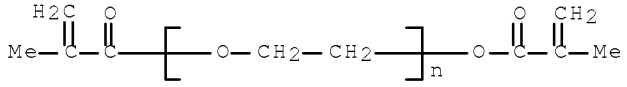
L101 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:522481 HCAPLUS Full-text
DOCUMENT NUMBER: 137:96288
TITLE: Polymeric gel electrolyte, lithium battery using the same, and methods of manufacturing the electrolyte and the lithium battery
INVENTOR(S): Noh, Liyeong-gon; Kim, Ki-ho
PATENT ASSIGNEE(S): Samsung SDI Co., Ltd., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20020090555	A1	20020711	US 2001-1994 <--	20011205
US 6811929	B2	20041102		
JP 2002207203	A	20020726	JP 2001-669 <--	20010105
JP 3858594	B2	20061213		
PRIORITY APPLN. INFO.:			JP 2001-669 A <--	20010105

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB A Li battery having a cathode, an anode, and a separator interposed between the cathode and the anode is described where the separator is an insulating resin sheet having a network structure and containing a polymeric gel electrolyte. The polymer electrolyte is prepared by polymerizing a polymer electrolyte precursor having a polymer -(C2H4O)x-(CH2CHO(CH2O(C2H2O)2R))y-(CH2CHO(CH2OCH2CH:CH2))z-, a crosslinking agent R1C(:CH2)C(:O)O-(CH2CH2O)n-COC(:CH2)R1, and an electrolyte solution composed of a Li salt and a nonaq. organic solvents (x = 0.1-0.6 mol, y = 0.1-0.8 mol, z = 0.1-0.8 mol, R = C1-6-alkyl, n = 3-30, R1 = H or Me). The battery has improved charging/discharging rate characteristics.
IT 25736-86-1 25852-47-5
(crosslinking agent; polymeric gel electrolyte, lithium battery using same, and methods of manufacturing electrolyte and lithium battery)
RN 25736-86-1 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-hydroxy- (CA INDEX NAME)



RN 25852-47-5 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



IC ICM H01M0010-40
INCL 429303000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 37
ST polymeric electrolyte lithium battery polyethylene glycol
IT Polyoxyalkylenes, uses
(crosslinked; polymeric gel electrolyte, lithium battery using same, and methods of manufacturing electrolyte and lithium battery)
IT Secondary batteries
(lithium; polymeric gel electrolyte, lithium battery using same, and methods of manufacturing electrolyte and lithium battery)
IT Battery electrolytes
Polymer electrolytes
(polymeric gel electrolyte, lithium battery using same, and methods of manufacturing electrolyte and lithium battery)
IT 3278-31-7, 1,4-Phenylenebismaleimide 25736-86-1 25852-47-5
(crosslinking agent; polymeric gel electrolyte, lithium battery using same, and methods of manufacturing electrolyte and lithium battery)
IT 25322-68-3D, Polyethylene glycol, crosslinked
(polymeric gel electrolyte, lithium battery using same, and methods of manufacturing electrolyte and lithium battery)
RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Anon	1998			EP 838487 A2	HCAPLUS
Anon	1999			JP 11039940 A	HCAPLUS
Lee	1999			US 5952126 A	HCAPLUS
Miura	2000			US 6159389 A	
Morigaki	1997			US 5597659 A	
Noh	2003			US 6632571 B2	HCAPLUS
Sogo	1997			US 5641565 A	HCAPLUS
Watanabe	2001			US 6180287 B1	HCAPLUS
Yamada	2000			US 6114068 A	HCAPLUS

L101 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:406008 HCAPLUS Full-text
DOCUMENT NUMBER: 129:82389
ORIGINAL REFERENCE NO.: 129:17007a,17010a
TITLE: Copolyethers and solid polymer electrolytes and secondary batteries
INVENTOR(S): Watanabe, Masayoshi; Miura, Katsuhito; Yanagida, Masanori; Higobashi, Hiroki; Endo, Takahiro
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan
SOURCE: PCT Int. Appl., 76 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9825990	A1	19980618	WO 1997-JP4499 <--	19971208
W: CA, CN, JP, KR, US RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2244904	A1	19980618	CA 1997-2244904 <--	19971208
CA 2244904	C	20061128		
EP 885913	A1	19981223	EP 1997-946152 <--	19971208
EP 885913	B1	20030416		
R: DE, FR, GB, IT				
CN 1210548	A	19990310	CN 1997-192119 <--	19971208
CN 1094494	C	20021120		
TW 444044	B	20010701	TW 1997-86118417 <--	19971208
JP 3223978	B2	20011029	JP 1998-526483 <--	19971208
US 6180287	B1	20010130	US 1998-101971 <--	19980730

PRIORITY APPLN. INFO.:	JP 1996-328422 <--	A	19961209
	JP 1996-345244 <--	A	19961225
	WO 1997-JP4499 <--	W	19971208

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

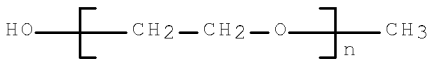
AB Solid polymer electrolytes prepared by blending (1) copolyether comprising a main chain derived from ethylene oxide mols. and a side chain having two oligooxyethylene groups with (2) an electrolytic salt and, if necessary, (3) a plasticizer selected from aprotic organic solvents, derivs. and metal salts of polyalkylene glycols having Mn 200-5000, and metal salts of the derivs. are superior to the solid electrolytes of the prior art in ionic conductivity and excellent in processability, moldability and mech. strengths. Secondary batteries can be produced by combining the solid polymer electrolytes with a neg. electrode of metallic lithium and a pos. electrode of cobalt lithium. 2-Glycidoxy-1,3-bis(2-methoxyethoxy)propane and ethylene oxide were copolymd. and cast together with LiClO4 to give a film with elec. conductivity 8.7 x 10-4 S/cm.

IT 9004-74-4D, lithium and dioctylaluminum complexes
25852-47-5 26570-48-9
(copolyethers and solid polymer electrolytes and secondary

batteries)

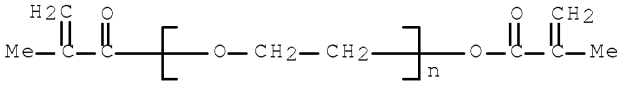
RN 9004-74-4 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-methyl-ω-hydroxy- (CA INDEX NAME)



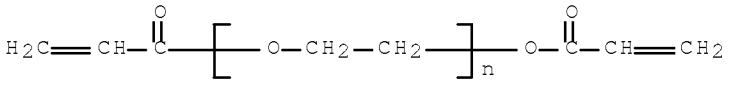
RN 25852-47-5 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



RN 26570-48-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(1-oxo-2-propen-1-yl)-ω-[(1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



IC ICM C08G0065-22
ICS C08G0065-08; C08G0077-46; C08G0059-22; C08F0299-02; C08L0071-02; C08L0083-12; C08L0063-00; C08K0003-24; C08K0005-42; H01M0006-18; H01M0010-40; H01G0009-025

CC 37-6 (Plastics Manufacture and Processing)

ST polyether solid electrolyte secondary battery

IT Plasticizers
Secondary batteries
Solid electrolytes
(copolyethers and solid polymer electrolytes and secondary batteries)

IT Polyethers, preparation
(copolyethers and solid polymer electrolytes and secondary batteries)

IT Polyoxyalkylenes, uses
(copolyethers and solid polymer electrolytes and secondary batteries)

IT Polysiloxanes, uses
(copolyethers and solid polymer electrolytes and secondary batteries)

IT Glycols, uses
(ethers; copolyethers and solid polymer electrolytes and secondary batteries)

IT Ethers, uses
(glycol; copolyethers and solid polymer electrolytes and secondary batteries)

IT Polyoxyalkylenes, uses
(lithium and dioctylaluminum complexes; copolyethers and solid polymer electrolytes and secondary batteries)

IT 126-73-8DP, Tributyl phosphate, reaction products with tributyltin chloride 1461-22-9DP, Tributyltin chloride, reaction products with tri-Bu phosphate
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 130670-52-9P, 2,5,9,12-Tetraoxatridecan-7-ol 206443-30-3P 209163-44-0P 209163-45-1P 209163-46-2P 209163-47-3P 209163-48-4P 209163-49-5P 209163-50-8P 209163-51-9P 209163-52-0P 209163-53-1P
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 206443-31-4P 209163-54-2P 209163-55-3P 209163-56-4P 209163-57-5P 209163-58-6P 209163-60-0P 209163-61-1P 209163-63-3P 209163-64-4P 209163-65-5P 209163-66-6P 209163-67-7P
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 96-48-0, γ-Butyrolactone 108-32-7 112-49-2, Triethylene glycol dimethyl ether 143-24-8, Tetraethylene glycol dimethyl ether 4353-28-0, Tetraethylene glycol diethyl ether 4437-85-8, Butylene carbonate 4499-99-4, Triethylene glycol diethyl ether 7429-90-5D, Aluminum, polyoxyalkylene complexes, uses 7439-93-2D, Lithium, polyoxyalkylene complexes, uses 7791-03-9, Lithium perchlorate 9004-74-4D, lithium and dioctylaluminum complexes 19836-78-3 24650-42-8 24991-55-7, Polyethylene glycol dimethyl ether 25322-68-3 25322-68-3D, lithium and dioctylaluminum complexes 25322-69-4 25852-47-5 26570-48-9 27274-31-3D, Polyethylene glycol monoallyl ether, lithium and dioctylaluminum complexes 53609-62-4, Polyethylene glycol diethyl ether 59788-01-1, Polyethylene glycol diallyl ether
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 31900-57-9D, Dimethylsilanediol homopolymer, trimethylsilyl-terminated 42557-10-8, Polyoxydimethylsilylene,trimethylsilyl-terminated 156118-35-3D, Dimethylsilanediol-methylsilanediol copolymer, trimethylsilyl-terminated
(copolyethers and solid polymer electrolytes and secondary batteries)

IT 106-89-8, reactions 109-86-4, Ethylene glycol monomethyl ether 111-77-3, Diethylene glycol monomethyl ether 13483-49-3, Ethylene glycol glycidyl methyl ether 71712-93-1, Diethylene glycol glycidyl methyl ether 73692-54-3, Triethylene glycol glycidyl methyl ether
(copolyethers and solid polymer electrolytes and secondary batteries)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Bailey, F	1967			US 3297783 A	HCAPLUS
Dai-Ichi Kogyo Seiyaku	1991			CA 2014442 A	HCAPLUS
Dai-Ichi Kogyo Seiyaku	1991			JP 347833 A	
Dai-Ichi Kogyo Seiyaku	1991			EP 392839 A1	HCAPLUS
Dai-Ichi Kogyo Seiyaku	1991			US 5116541 A	HCAPLUS
Dai-Ichi Kogyo Seiyaku	1991			DE 69020777 E	

Dai-Ichi Kogyo Seiyaku	1991		KR 9501854 B1	
Hitachi Maxell Ltd	1990		JP 02295004 A	HCAPLUS
Osaka Soda Co Ltd	1987		EP 222586 A1	HCAPLUS
Osaka Soda Co Ltd	1987		DE 3650211 G	
Osaka Soda Co Ltd	1987		US 4711950 A	HCAPLUS
Osaka Soda Co Ltd	1987		JP 62169823 A	HCAPLUS
Yuasa Corp	1993		JP 05304051 A	HCAPLUS

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (15 CITINGS)

L101 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1998:147370 HCAPLUS Full-text
DOCUMENT NUMBER: 128:205658
ORIGINAL REFERENCE NO.: 128:40673a,40676a
TITLE: Solid electrolytes derived from branched polyoxyethylene polymers
INVENTOR(S): Miura, Katsuhito; Shoji, Shigeru; Sakashita, Takahiro; Matoba, Yasuo
PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan; Miura, Katsuhito; Shoji, Shigeru; Sakashita, Takahiro; Matoba, Yasuo
SOURCE: PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9807772	A1	19980226	WO 1997-JP2854	19970819
			<--	
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
CA 2235166	A1	19980226	CA 1997-2235166	19970819
			<--	
CA 2235166	C	20081125		
AU 9738657	A	19980306	AU 1997-38657	19970819
			<--	
EP 856538	A1	19980805	EP 1997-935805	19970819
			<--	
EP 856538	B1	20021120		
R: CH, DE, ES, FR, GB, IT, LI, NL				
CN 1199408	A	19981118	CN 1997-191109	19970819
			<--	
CN 1096481	C	20021218		
BR 9706631	A	19991123	BR 1997-6631	19970819
			<--	
TW 446731	B	20010721	TW 1997-86111865	19970819
			<--	
JP 3215440	B2	20011009	JP 1998-510574	19970819
			<--	
ES 2187803	T3	20030616	ES 1997-935805	19970819
			<--	
US 6162563	A	20001219	US 1999-51776	19990311

			<--		
US 20020012849	A1	20020131	US 2000-739241		20001219
			<--		
PRIORITY APPLN. INFO.:			JP 1996-218575	A	19960820
			<--		
			JP 1996-249358	A	19960920
			<--		
			WO 1997-JP2854	W	19970819
			<--		
			US 1999-51776	A1	19990311
			<--		

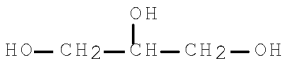
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The solid electrolytes having high ion conductivity, moldability and mech. strengths are prepared by mixing (1) a polyether copolymer having a backbone derived from ethylene oxide and a side chain of oligo-oxyethylene, (2) an electrolyte salt compound, and (3) an aprotic organic solvent, or a plasticizer consisting of a derivative or a metal salt of a polyalkylene glycol having a number-average mol. weight of 200-5000 or a metal salt of the derivative The electrolytes are useful for making rechargeable secondary batteries containing an anode of a lithium metal and a cathode of lithium cobaltate. Reacting diethylene glycol glycidyl Me ether 42 with ethylene oxide 200 in n-hexane in the presence of Bu3Sn chloride and Bu3PO4 gave a polyether which was mixed with Li perchlorate (I) dissolved in propylene carbonate to a I/ethylene oxide molar ratio of 0.05 and cast in a PTFE mold at 100° and 20 kg/cm2 for 10 min to give a film with conductivity 1.1x10-2 S/cm at 20°.

IT 56-81-5D, Glycerol, ethers, compds. with pentaerythritol
(additives; solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

RN 56-81-5 HCAPLUS

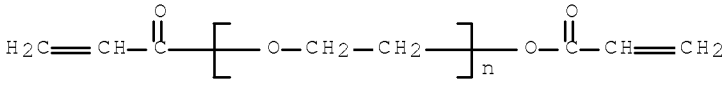
CN 1,2,3-Propanetriol (CA INDEX NAME)



IT 26570-48-9, Polyethylene glycol diacrylate
(in solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

RN 26570-48-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(1-oxo-2-propen-1-yl)-ω-[(1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)

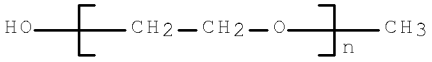


IT 9004-74-4D, Polyethylene glycol monomethyl ether, octylaluminum derivs.
(plasticizers; in solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

RN 9004-74-4 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-methyl-ω-hydroxy- (CA INDEX

NAME)



IC ICM C08G0065-22
ICS C08G0065-08; C08G0077-46; C08G0059-22; C08F0299-02; C08L0071-02; C08L0083-12; C08L0063-00; C08K0003-24; C08K0005-42; H01M0006-18; H01M0010-40; H01G0009-025

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 72

ST polyoxyethylene branched polymer solid electrolyte; ethylene oxide copolymer solid electrolyte; lithium perchlorate electrolyte polyoxyethylene blend; secondary battery electrolyte polyoxyethylene compn

IT Solvents
(aprotic; solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT Secondary batteries
(solid electrolyte compns. containing branched polyoxyethylene polymers for)

IT Plasticizers
(solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT Polyoxyalkylenes, uses
(solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT 107-21-1D, Ethylene glycol, compds. with glyceryl ethers
(additives; in solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT 56-81-5D, Glycerol, ethers, compds. with pentaerythritol
(additives; solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT 75-05-8, Acetonitrile, uses 96-48-0, γ-Butyrolactone 108-32-7, Propylene carbonate 109-99-9, THF, uses 112-49-2, Triethylene glycol dimethyl ether 143-24-8, Tetraethylene glycol dimethyl ether 4353-28-0, Tetraethylene glycol diethyl ether 4437-85-8, Butylene carbonate 4499-99-4, Triethylene glycol diethyl ether 19836-78-3
(aprotic solvent; in solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT 7791-03-9, Lithium perchlorate 90076-65-6, Lithium bistrifluoromethane sulfonyl imide
(electrolyte; in solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT 91848-80-5
(in solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT 25721-76-0, Polyethylene glycol dimethacrylate 26570-48-9, Polyethylene glycol diacrylate 27252-83-1, Polyethylene glycol diacetate
(in solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT 9004-74-4D, Polyethylene glycol monomethyl ether, octylaluminum derivs. 24991-55-7, Polyethylene glycol dimethyl ether 27274-31-3D, Polyethylene glycol monoallyl ether, octylaluminum

derivs. 27879-07-8D, Polyethylene glycol monoethyl ether, octylaluminum derivs. 31494-81-2, Polyethylene glycol monomethyl ether sodium salt 53609-62-4, Polyethylene glycol diethyl ether 59788-01-1, Polyethylene glycol diallyl ether 60436-25-1 113151-63-6 153815-02-2
(plasticizers; in solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT 203863-94-9
(plasticizers; n solid electrolyte compns. containing branched polyoxyethylene polymers for secondary battery)

IT 203863-85-8P, Diethylene glycol allyl glycidyl ether-ethylene oxide graft copolymer 203863-86-9P, Allyl glycidyl ether-diethylene glycol glycidyl allyl ether-ethylene oxide graft copolymer 203863-87-0P, Ethylene oxide-glycidyl methacrylate-tetraethylene glycol glycidyl allyl ether graft copolymer 203863-88-1P, Ethylene oxide-γ-glycidoxypropyltrimethoxysilane-polyethylene glycol glycidyl methyl ether graft copolymer 203863-89-2P, Diethylene glycol glycidyl cyclohexyl ether-ethylene oxide-γ-glycidoxypropylmethyldimethoxysilane copolymer 203863-90-5P, Ethylene oxide-2,3-epoxypropyl 2',3'-epoxy-2'-methylpropyl ether-triethylene glycol glycidyl methyl ether graft copolymer 203863-92-7P, Diethylene glycol 2,3-epoxypropyl 2',3'-epoxy-2'-methylpropyl ether-diethylene glycol glycidyl propyl ether-ethylene oxide graft copolymer 203863-93-8P, Ethylene oxide-triethylene glycol glycidyl methyl ether graft copolymer 203944-15-4P, Diethylene glycol glycidyl methyl ether-ethylene oxide graft copolymer
(solid electrolyte compns. for secondary battery)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Bailey, F	1967			US 3297783 A	HCAPLUS
Dai-Ichi Kogyo Seiyaku	1991			JP 03-47833 A	HCAPLUS
Dai-Ichi Kogyo Seiyaku	1991			CA 2014442 A	HCAPLUS
Dai-Ichi Kogyo Seiyaku	1991			EP 392839 A1	HCAPLUS
Dai-Ichi Kogyo Seiyaku	1991			US 5116541 A	HCAPLUS
Dai-Ichi Kogyo Seiyaku	1991			DE 69020777 E	
Dai-Ichi Kogyo Seiyaku	1991			KR 9501854 B1	
Hitachi Maxell Ltd	1990			JP 02-295004 A	HCAPLUS
Osaka Soda Co Ltd	1987			EP 222586 A1	HCAPLUS
Osaka Soda Co Ltd	1987			DE 3650211 G	
Osaka Soda Co Ltd	1987			US 4711950 A	HCAPLUS
Osaka Soda Co Ltd	1987			JP 62-169823 A	HCAPLUS
Yuasa Corp	1993			JP 05-304051 A	HCAPLUS

OS.CITING REF COUNT: 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (20 CITINGS)

L101 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1996:309129 HCAPLUS Full-text
DOCUMENT NUMBER: 124:348077
ORIGINAL REFERENCE NO.: 124:64541a,64544a
TITLE: Vacuum deposition of polymer electrolytes on flexible substrates
AUTHOR(S): Affinito, J. D.; Gross, M. E.; Coronado, C. A.; Dunham, G. C.; Martin, P. M.
CORPORATE SOURCE: Pacific Northwest National Laboratory, Materials Sciences Department, Richland, WA, 99352, USA
SOURCE: Proceedings of International Conference on Vacuum Web Coating, 9th, Tucson, Ariz., Nov. 12-14, 1995

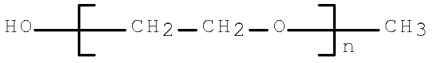
(1995), 20-36. Editor(s): Bakish, Robert A. Bakish Materials Corp.: Englewood, N. J.
CODEN: 62UPAV
DOCUMENT TYPE: Conference
LANGUAGE: English

AB Two new, high rate, vacuum processes have been developed for the deposition of polymer electrolyte layers on wide web substrates. One method involves the vacuum extrusion of monomer salt solns. followed by e-beam or UV curing. The second method involves the vacuum flash evaporation of the monomer salt solution followed by e-beam or UV curing. Each method is compatible with simultaneous, in-line, deposition by conventional processes like sputtering or evaporation in a wide web system. Optically clear polymer electrolyte layers may be deposited at line speeds in excess of 100 m per min with these new techniques. Ionic conductivity measurements will be presented for vacuum deposited, evaporated and extruded, polymer electrolyte layers. Films were deposited with thicknesses ranging from 2 to 50 μm. Application of these methods to ongoing electrochromic and battery work at PNNL will be discussed. The basic battery layer structure will be discussed and some preliminary data on the lithium anode deposition and polymer multilayer (PML)/oxide encapsulation layers will be presented. Of particular note are the O2 and H2O permeation rates of our PML/Oxide/PML barrier layers. These barrier layers are perfectly transparent, with permeations below the detection limits of the instrumentation - <0.001 mL/100 in.2-24 h for O2 and <0.001 g/100 in2.-24 h for H2O.

IT 9004-74-4, Polyethylene glycol methyl ether
26570-48-9
(vacuum deposition of polymer electrolytes on flexible substrates)

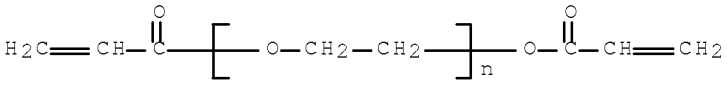
RN 9004-74-4 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-methyl-ω-hydroxy- (CA INDEX NAME)



RN 26570-48-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(1-oxo-2-propen-1-yl)-ω-[(1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST battery polymer electrolyte vacuum deposition; electrochromic device polymer electrolyte vacuum deposition

IT Battery electrolytes
Crosslinking
Lamination
(vacuum deposition of polymer electrolytes on flexible substrates)

IT 9004-74-4, Polyethylene glycol methyl ether 21324-40-3,
Lithium hexafluorophosphate 26570-48-9 33454-82-9,
Lithium trifluoromethanesulfonate
(vacuum deposition of polymer electrolytes on flexible substrates)
OS.CITING REF COUNT: 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

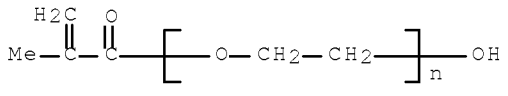
L101 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1991:146972 HCAPLUS Full-text
DOCUMENT NUMBER: 114:146972
ORIGINAL REFERENCE NO.: 114:24871a,24874a
TITLE: Solid electrolyte-containing lithium batteries and their manufacture
INVENTOR(S): Kashima, Mikito; Takahashi, Toru
PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02192661	A	19900730	JP 1989-9872 <--	19890120
PRIORITY APPLN. INFO.:			JP 1989-9872 <--	19890120

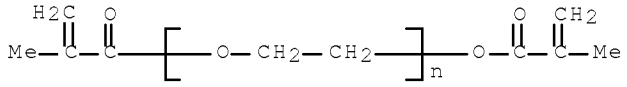
AB The batteries have an anode of a plurality of fine Li wires coated with a thin layer of a polymer solid-electrolyte separator inserted in a battery case-cathode collector and a cathode-active mass filled in the case void. The batteries are prepared by filling the cathode -active mass into the anode-containing battery cases under reduced pressure. Molten Li was coated on fine stainless steel wires by extrusion and an electrolyte mixture containing PEG monomethacrylate, PEG acrylate, dimethoxy PEG, and LiClO4 was applied to the wires and cured by UV irradiation to form a solid electrode-separator film on the wires. Li-MnO2 batteries using anodes prepared from these wires and a LiClO4 in propylene carbonate-DME electrolyte had good performance at high discharge rate.

IT 25736-86-1D, complexes of lithium with PEG methacrylate and dimethoxy PEG and 25852-47-5D, complexes of lithium with PEG monomethacrylate and dimethoxy PEG and
(electrolyte-separator, anodes from lithium wires coated with, for batteries)

RN 25736-86-1 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-hydroxy- (CA INDEX NAME)



RN 25852-47-5 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-(2-methyl-1-oxo-2-propen-1-yl)-ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]- (CA INDEX NAME)



IC ICM H01M0006-18
ICS H01M0004-06; H01M0004-08
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST solid electrolyte battery lithium anode; lithium perchlorate PEG battery electrolyte; separator battery lithium perchlorate PEG
IT Batteries, primary
(lithium-manganese dioxide, high discharge-rate)
IT Anodes
(battery, lithium, from polymer solid electrolyte-coated wires of, high discharge-rate)
IT 7439-93-2, Lithium, uses and miscellaneous
(anodes from polymer solid electrolyte-coated wires of, for batteries)
IT 7791-03-9, Lithium perchlorate
(electrolyte-separator layers containing PEG derivs. and, anodes from lithium wires coated with, for batteries)
IT 7439-93-2D, Lithium, complexes with mixts. of PEG derivs.
24991-55-7D, complexes of lithium with PEG methacrylate and PEG monomethacrylate and 25736-86-1D, complexes of lithium with PEG methacrylate and dimethoxy PEG and 25852-47-5D, complexes of lithium with PEG monomethacrylate and dimethoxy PEG and
(electrolyte-separator, anodes from lithium wires coated with, for batteries)

=> D L102 1-2 IBIB ABS HITSTR HITIND RETABLE

L102 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:433703 HCAPLUS Full-text
DOCUMENT NUMBER: 141:9611
TITLE: Enzyme immobilization for use in biofuel cells and sensors
INVENTOR(S): Minteer, Shelley D.; Akers, Niki L.; Moore, Christine M.
PATENT ASSIGNEE(S): St. Louis University, USA
SOURCE: U.S. Pat. Appl. Publ., 33 pp., which
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040101741	A1	20040527	US 2003-617452 <--	20030711
US 7638228	B2	20091229		
CA 2507455	A1	20040617	CA 2003-2507455	20031121

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WO 2004051774 A2 20040617 WO 2003-US37336 20031121
<--
WO 2004051774 A3 20041125
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,
KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG
AU 2003297552 A1 20040623 AU 2003-297552 20031121
<--
EP 1565957 A2 20050824 EP 2003-812443 20031121
<--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
JP 2006508519 T 20060309 JP 2004-570766 20031121
<--
US 20100041123 A1 20100218 US 2009-576014 20091008
<--
PRIORITY APPLN. INFO.: US 2002-429829P P 20021127
<--
US 2003-486076P P 20030710
<--
US 2003-617452 A 20030711
<--
WO 2003-US37336 W 20031121
<--

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 141:9611

AB Disclosed are bioanodes comprising a quaternary ammonium treated Nafion polymer membrane and a dehydrogenase incorporated within the treated Nafion polymer. The dehydrogenase catalyzes the oxidation of an organic fuel and reduces an adenine dinucleotide. The ion conducting polymer membrane lies juxtaposed to a polymethylene green redox polymer membrane, which serves to electro-oxidize the reduced adenine dinucleotide. The bioanode is used in a fuel cell to produce high power densities.

IT 12597-68-1, Stainless steel, uses
(electron conductor; enzyme immobilization for use in biofuel cells and sensors)

RN 12597-68-1 HCAPLUS

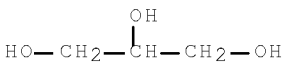
CN Stainless steel (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 56-81-5, Glycerol, uses 67-56-1, Methanol, uses
(enzyme immobilization for use in biofuel cells and sensors)

RN 56-81-5 HCAPLUS

CN 1,2,3-Propanetriol (CA INDEX NAME)



RN 67-56-1 HCAPLUS
CN Methanol (CA INDEX NAME)

IC ICM H01M0004-90
ICS H01M0004-96; H01M0008-10; C12N0011-08
INCL 429043000; X42-9 4.4; X42-9 4.2; X42-9 3.0; X42-9 1.3; X43-518.0
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 7, 38
ST enzyme immobilization biofuel cell sensor; fuel cell biochem enzyme immobilization
IT Fuel cell cathodes
(biocathode; enzyme immobilization for use in biofuel cells and sensors)
IT Fuel cells
(biochem. fuel cells; enzyme immobilization for use in biofuel cells and sensors)
IT Nanotubes
(carbon, electron conductor; enzyme immobilization for use in biofuel cells and sensors)
IT Bioassay
Bioreactors
Biosensors
Ceramics
Colloids
Conducting polymers
Immunoassay
Liposomes
Nanoparticles
(enzyme immobilization for use in biofuel cells and sensors)
IT Gels
(sol, carbon modified with; enzyme immobilization for use in biofuel cells and sensors)
IT 7439-89-6, Iron, uses 7439-97-6, Mercury, uses 7440-02-0, Nickel, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-33-7, Tungsten, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7782-42-5, Graphite, uses 11129-18-3, Cerium oxide 12597-68-1, Stainless steel, uses 12612-50-9, Molybdenum sulfide
(electron conductor; enzyme immobilization for use in biofuel cells and sensors)
IT 50-00-0, Formaldehyde, uses 50-28-2, Estradiol, uses 50-99-7, Glucose, uses 50-99-7, D-Glucose, uses 53-57-6, NADPH 56-73-5, Glucose-6-phosphate 56-81-5, Glycerol, uses 57-60-3, Pyruvate, uses 58-22-0, Testosterone 58-68-4, NADH 60-33-3, Linoleic acid, uses 64-17-5, Ethanol, uses 64-20-0, TetramethylAmmonium bromide 67-56-1, Methanol, uses 67-63-0, Isopropanol, uses 71-47-6, Formate, uses 71-50-1, Acetate, uses 71-91-0, TetraethylAmmonium bromide 72-89-9, Acetyl co-a 75-07-0, Acetaldehyde, uses 78-83-1, Isobutanol, uses 79-33-4, uses 85-61-0, Coenzyme a, uses 87-78-5, Mannitol 96-41-3, Cyclopentanol 104-54-1, Cinnamyl alcohol 107-18-6, Allyl alcohol, uses 113-21-3, Lactate, uses 116-14-3D,

Tetrafluoroethylene, copolymer, with perfluorosulfonic acid 116-31-4, Retinal 123-72-8, Butanal 126-44-3, Citrate, uses 149-61-1, Malate 151-21-3, Sodium dodecyl sulfate, uses 320-77-4 383-86-8, Glycerate 577-11-7, Sodium bis(2-ethylhexyl)sulfosuccinate 598-35-6, Lactaldehyde 608-59-3, Gluconate 633-96-5 820-11-1 866-97-7, TetrapentylAmmonium bromide 921-60-8, L-Glucose 1119-97-7, TetraDecyltrimethylammonium bromide 1333-74-0, Hydrogen, uses 1941-30-6, TetrapropylAmmonium bromide 2002-48-4, Glucuronate 2082-84-0, Decyltrimethylammonium bromide 3615-39-2, Sorbose 7664-41-7, Ammonia, uses 9001-37-0, Glucose oxidase 9001-60-9, Lactic dehydrogenase 9013-18-7, Acyl-CoA synthase 9014-20-4, Pyruvate dehydrogenase 9028-53-9, Glucose dehydrogenase 9028-84-6, Formaldehyde dehydrogenase 9028-85-7, Formate dehydrogenase 9028-86-8, Aldehyde dehydrogenase 9031-72-5, Alcohol dehydrogenase 9035-82-9, Dehydrogenase 9055-15-6, Oxidoreductase 10326-41-7, uses 12124-97-9, Ammonium bromide 26264-14-2, Propanediol 26566-61-0, Galactose 29354-98-1, Hexadecanol 30237-26-4, Fructose 31103-86-3, Mannose 35296-72-1, Butanol 53414-64-5, Lactose dehydrogenase 62309-51-7, Propanol 66796-30-3, Nafion 117 163294-14-2, Nafion 112
(enzyme immobilization for use in biofuel cells and sensors)

IT 13463-67-7, Titanium oxide, uses
(nanoporous, electron conductor; enzyme immobilization for use in biofuel cells and sensors)

IT 10043-11-5, Boron nitride, uses
(nanotubes; enzyme immobilization for use in biofuel cells and sensors)

RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Acker	2002			US 6460733 B2	
Anon	1989			EP 0300082 A	HCAPLUS
Anon	1990			WO 90/05910 A1	HCAPLUS
Anon	1995			EP 0667397 A1	HCAPLUS
Anon	1996			EP 0747984 A2	HCAPLUS
Anon	1999			WO 99/38003 A1	HCAPLUS
Anon	2000			WO 00/22688 A3	HCAPLUS
Anon	2003			WO 03/006713 A1	HCAPLUS
Anon	2003			WO 03/019170 A1	HCAPLUS
Anon	2003			WO 03106966 A2	HCAPLUS
Anon	2004				
Anon	2004			WO 2004079848 A	HCAPLUS
Anon	2006				
Anon	2006				
Anon	2007				
Anon	2007				
Armstrong	2004			US 20040214053 A1	HCAPLUS
Beck	1978			US 4117202 A	HCAPLUS
Blaedel, W	1975	47	1337	Analytical Chemistry	HCAPLUS
Bonaventura	1988			US 4761209 A	HCAPLUS
Bove	1980			US 4207076 A	HCAPLUS
Chen	2001	123	8630	Journal of American	HCAPLUS
Corey	1995			US 5393615 A	HCAPLUS
Davis	1983	5	383	Enzyme and Microbial	HCAPLUS
Dorman	1987			US 4705503 A	
Dutil	2003			US 20030027023 A1	HCAPLUS
Eckhardt	2002			US 6387625 B1	HCAPLUS
Frebortova	1998	1363	24	Biochemica et Biophy	HCAPLUS
Gieshoff	2002			US 20020025456 A1	HCAPLUS

Gorton	1984			US 4490464 A	HCAPLUS
Gouda, M		10	849	Electroanalysis	
Grate	2003			US 20030164335 A1	HCAPLUS
Grate	2004			US 20040121018 A1	HCAPLUS
Green	1993	268	7792	Journal of Biologica	HCAPLUS
Gregg	1993			US 5262035 A	HCAPLUS
Gregg	1993			US 5264105 A	HCAPLUS
Gregg	1994			US 5320725 A	
Grot	1999			US 5919583 A	HCAPLUS
Heller	1993			US 5262305 A	HCAPLUS
Heller	1994			US 5356786 A	HCAPLUS
Heller	1997			US 5593852 A	HCAPLUS
Heller	1997			US 5665222 A	HCAPLUS
Heller	2001			US 6294281 B1	HCAPLUS
Heller	2002			US 20020025469 A1	HCAPLUS
Heller	2003			US 6531239 B2	HCAPLUS
Hill	1998			US 5820551 A	
Jin, A	1993	112	71	Mikrochim Acta	
Karyakin	1996	68	4335	Anal. Chem.	HCAPLUS
Kaylor	2005			US 2005/0101841 A9	
Khan	2004			US 20040217016 A1	HCAPLUS
Kim	2003	150	A209	Journal of Electroch	HCAPLUS
Leonida	1996	6	1663	GB	HCAPLUS
Liberatore	2002			US 6500571 B2	HCAPLUS
Liberatore	2003			US 20030039868 A1	HCAPLUS
Martin	1998			US 5718947 A	HCAPLUS
Minteer	2004			US 20040101741 A1	HCAPLUS
Miyamoto	1999			US 5958199 A	HCAPLUS
Nakamura	1980			US 4224125 A	HCAPLUS
Office Action	2006				
Office Action	2006				
Office Action	2007				
Ohara, T	1994	66	2451	Vo.	HCAPLUS
Ozaki	2001			US 6294291 B1	HCAPLUS
Palmore	1994	566	271	ACS Symposium Series	HCAPLUS
Palmore	1998	443	155	Journal of Electroan	HCAPLUS
Partial Search Report	2006				
Plotkin, E	1981	3	187	Biotechnology Letter	HCAPLUS
Ryabova, E		6	804	Angew. Chem. Int. Ed	
Saini	1996			US 5521101 A	HCAPLUS
Schindler, J	1994	32	25	European Journal of	
Schrenk	2002	205	3	Journal of Membrane	HCAPLUS
Skotheim	1993			US 5264092 A	HCAPLUS
Sun	2003			US 20030087144 A1	HCAPLUS
Sun	2003			US 20030198858 A1	HCAPLUS
Thomas	2003	213	55	Journal of Membrane	HCAPLUS
Wilner	2003			US 20030148169 A1	HCAPLUS
Wilson	1993			US 5211984 A	HCAPLUS
Worthington, V	1988	16	1	Worthington Enzyme M	
Yamada, Y		6	682	Biotechnol. Prog.	
Yamamoto	2002			US 20020127440 A1	HCAPLUS
Yoshioka, H		10	1901	Biosci. Biotechnol.	
Yue, P	1986	33B	B69	Chemical Engineering	
Zawodzinski	1995	11	1035	Electroanalysis	
Zhou	1996	329	41	Analytica Chimica Ac	HCAPLUS

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)